JANUARY 25, 1924

# THE RUBBER AGE

VOL. XIV. NO. 8

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## TABLE OF CONTENTS

NEWS SECTION

Balloon Tires at Auto Show ..... 289
Rubber Industry Shows Improvement ..... 289
Death of Tibor Remenyi ..... 290
Division Chairmen Elected for 1924 ..... 291
Griffin Elected President of M.A.M.A. ..... 292
Weston Elected Chairman of Board ..... 293
General Earns $30 on Common Stock ..... 294
Tire with Double Tread Produced ..... 295
November Tire Stocks Reduced ..... 296
Scrap and Reclaimed Rubber Exports ..... 297

FEATURE SECTION

1924 Prospects for Crude Rubber ..... 299
*By Fred B. Peterson*

Will Rubber Roads Prove the Super-Road ? .... 300
*By Daniel Gilmartin*

Rubber to Command World Attention ..... 302
Effect of Plantation Treatment on Quality of Rubber ..... 303
Technical Abstracts ..... 304
Statistics ..... 306

MARKET SECTION

Cottons and Fabrics ..... 308
Chemicals and Compounding Ingredients ..... 309
Crude, Scrap and Reclaimed Rubber ..... 310
Patents, New Incorporations and Trade Marks .. 311

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# THE RUBBER AGE

*The Only Twice-a-Month Rubber Publication*

VOL. XIV. JANUARY 25, 1924 No. 8


## BALLOON TIRES ARE TALK OF AUTO SHOW

**Many New Models Equipped with Balloon Tires for First Time—Sales and Attendance Records at Show Reach New Levels**

More attention was probably paid to balloon tires at the 24th National Automobile Show held in New York City, January 5—12, than to any other item at the exhibition. Everybody came prepared to investigate and every opportunity was given to obtain information from car manufacturers as to the comfort and riding qualities of this latest development in tire design.

About fifteen makes of cars had balloon tire equipment on exhibition but with few exceptions, notably, Buick, Chevrolet and Star, other car manufacturers furnished balloons as optional equipment at extra cost depending on the sizes needed. That the public was interested was shown by the numerous questions asked by the public on the various points which had been called to their attention through the advertising and publicity given to balloons by tire manufacturers. And it seems to be the opinion of the tire and automobile industries that the balloon tire has come to stay. Some refinements and changes may have to be made, other sizes may have to be adopted and certain structural changes in wheel, rim and steering gears may have to be made, but the added comfort and decreased car upkeep will serve to increase the balloon tire's popularity.

*Location Satisfactory*

Despite the fact that the Automobile Show this year was held about ten miles from the center of the city in the 258th Field Artillery Armory, at Kingsbridge Road and Jerome Ave., Bronx, the crowds broke all previous records, thus vindicating the choice of the exhibition hall. On account of the better conditions and larger space, general satisfaction was expressed by exhibitors and there is every liklihood that the Armory will be the future home of the auto show. Very few were kept away by the distance, and these were not missed for the interested buyer or owner went regardless of distance or other inconvenience.

Spread out over a single floor, the largest in the world it is claimed, (300 x 600 feet), the exhibit of cars and accessories presented a wonderful sight when viewed from the balcony seats. The cars were exhibited in the center of the floor and every conceivable kind of accessory from a piston ring to a new body were shown in spaces at each end and around the sides of the hall. The decorations were very attractive and the management is to be complimented on the design of the surroundings as well as on the successful way in which the exhibition was conducted.

*Auto Exhibits*

As usual, many new car models were shown for the first time to a waitful public at the New York show. The feature of the show, outside of the balloon tires, was the introduction of four wheel brakes. Much had been heard of this mechanical innovation and visitors were much interested in learning the fine points of each installation. It was reported that about 30 per cent of the cars at the show were equipped with four wheel brakes with a number of manufacturers making them optional. Much work has yet to be done to bring them up to standard but is it acknowledged that their many advantages will make them regular equipment on all cars before long.

The tendency toward closed model cars was more pronounced at this show than at any previous time. Every exhibit included closed models and the interest shown in the lower priced closed

*(Continued on Page 290)*

## TIRE INDUSTRY SHOWS GENERAL IMPROVEMENT

**Increased Production and Volume of Business Feature Year's Start—Plants Effect Economies Without Distressing Labor—Earnings Good**

Increased activity in all branches of the rubber industry in Akron and other important districts, with the possible exception of New England footwear centers, and a growing volume of sales and larger production has featured the first month of the new year for which excellent things have been predicted.

Production of tires in Akron is now reported to be around 100,000 a day, which compares with about 75,000 tires a day late in 1923. Many plants are working to capacity while others are steadily increasing their operations in order to keep pace with the large demands put upon them within the past several weeks. Many companies have booked contracts with automobile manufacturers, which are bigger than any previously made and which will keep them busy for the next two or three months. In the majority of such cases new prices represented increases of 10 to 15 per cent over old contract agreements.

While New England has been rather hard hit in her rubber footwear manufacturing industry by the unusually mild

*(Continued on Page 298)*

**Exhibit of A. Schrader's Son, Inc., at Auto Show**

## BALLOON TIRES ARE TALK OF AUTO SHOW

*(Continued from Page 289)*

car models augur well for their future. It was not so long ago that such models commanded very high prices but recent announcements of many car manufacturers have brought the prices more in line with other models.

*Auto Accessories*

Over 200 manufacturers of auto accessories had booths at the show, exhibiting hundreds of their latest aids to the motorist. This is the first time that such exhibitors were placed on the same floor with the cars and the exhibitors were very much pleased at the amount of interest shown in their products. They feel that with such good display spaces a greater amount of publicity is possible.

Among the more prominent exhibitors of interest to the rubber industry was the exhibit of A. Schrader's Son, Inc., manufacturers of inner tube valves and pressure gage equipment. Their exhibit was placed close to the car exhibits, thus contributing greatly to its value and interest. Among the products shown was a complete line of inner tube valves, insides, caps, pump connections and pressure gages. The latest addition was the special low pressure angle gage designed for balloon tires which makes it possible to read pressures to the exact pound, in contrast to the regular gage which has 5 pound graduations. A 36 in. model of a valve and cap was exhibited, as was a number of the Schrader Silent Salesmen which have compartments for stocking Schrader products. Among those from the company in attendance at the booth were: M. H. Tisne, Manager Accessory Sales; J. Hoerger, Sales Manager and Assistant Treasurer and R. L. deBrauwere, assistant Sales Manager.

Other exhibits of special interest to rubber manufacturers were the following: Special wheels for balloon tires by the Hayes wheel Co., the Budd Wheel Co., and the Wire Wheel Co.; spare tire lock and tire carriers by the Oakes Co.; gears and gear material by the Diamond State Fibre Co.; new steel wheel for small tires by the Clark Equipment Co.; balloon tire chains and tire lock chains by the American Chain Co.; spare tire locks by the Pines Mnfg. Co.; new tire changer by the Weaver Mnfg. Co.; cord and balloon tires by the Cord Tire Corporation.

## Fire at Miller Branch

Defective wiring is believed to have caused a fire which recently swept the Columbus, Ohio, branch of the Miller Rubber Co. Loss is estimated to be $50,000.

## Miller Strike Settled

A total of 72 calender room employees of the Miller Rubber Co., Akron, Ohio, who went on strike during the third week of last November have returned to work, according to officials of the company. The men suspended operations following their refusal to accept an adjustment in piece prices for a thirty-day trial period. As this walkout occurred during inventory it did not result in any appreciable reduction in output of the Miller plant as reported by press advices. After due consideration the men decided to accept the proposition made to them by the Miller company, it is said.

## Excel Plant Under Hammer

Judge McClure has ordered the sale of the Excel Tire and Rubber Company plant at Wadsworth, Ohio. The appraised value of the physical assets of the of the comany is $176,394.80, but this does not include accounts receivable which have not been appraised and which are not to be sold. Liabilities of the company at the time it passed in receiver's hands last April were approximately $150,000. A small portion of these have been met by the receiver. As reported in THE RUBBER AGE recently, the Excel properties may be purchased by the Studebaker-Wulff Tire and Rubber Company of Marion, Ohio.

## Elbogen Opens Offices

Paul Elbogen has severed his connection with Fred Stern & Co., Inc., crude rubber dealers of New York City and has opened offices at 24-26 Stone St., under the firm name of Paul Elbogen & Co., Inc. Mr. Elbogen will conduct a business as importer and dealer in crude rubber and kindred products.

## Adopts Four-Day Week

The Firestone-Apsley Rubber Co., Hudson, Mass., has gone on a four-day week schedule, the plant not being operated on Fridays, Saturdays or Sundays. Continued mildness of winter weather is said to be the cause of this change.

## Titan Rubber Incorporated

The Titan Rubber Co., which as the Canton Rubber Company recently took over the properties of the Gordon Tire and Rubber Company of Canton, Ohio, has been incorporated under the Ohio laws at $250,000.

## *Tibor Remenyi*

Friends and associates were shocked to learn of the death on Friday, December 21, of Tibor Remenyi, for several years general manager of The Aluminum Flake Company, Akron, Ohio.

Mr. Remenyi died quite suddenly a few days after having contracted pneumonia. Despite the fact that he had been suffering for several years he continued to direct the affairs of his business up to a few hours before the time of his death.

The story of the life of Tibor Remenyi reads like a chapter from the classics of which he was so passionately fond. Born February 15, 1873, in Hungary, he was the son of Edward Remenyi, the great Hungarian violinist, who for several years was acclaimed the world's greatest of his art.

At an early age Mr. Remenyi was taken by his father to France where he received his education at the Academy of Paris and where he came into intimate association with many of Europe's leading figures in the world of art and letters. Inheriting his illustrious father's temperament he became a connoiseur in art, literature and music. When a young man in Paris he was well acquainted with Victor Hugo, Rodin and many other celebrities. Franz Lizt was his godfather and he numbered Kossuth, great Hungarian patriot, and Mme. Sarah Bernhart among his close friends.

Upon the death of his father, Remenyi came to Akron about 20 years ago with his mother, Mme. De Fayolle, who was an Hungarian noblewoman. He took charge of the Alliance Francaise club, teaching French diction. He continued this work for about eight years during which time he became the close friend of Frank Reifsnider, then vice-president and manager of the Aluminum Flake Co. Upon the death of Mr. Reifsnider he became manager of the company. This was in 1914.

Tibor Remenyi

It was at this point that Mr. Remenyi's brilliant business genius, rarely found in a person of such artistic temperament, was revealed. He took up his friend's work with an ardor that soon became the one great passion of his life and carried on with amazing success and persistence even through five years of ill health and up to the very eve of death.

# DIVISION CHAIRMEN ELECTED FOR 1924

**Rubber Association Divisions Elect New Chairmen and Executive Committees for Ensuing Year at Meetings During Show Week in New York.**

Following are the results of elections of the various divisions and committees of the Rubber Association held in New York during the week of the annual meeting of the association:

### *Tire Manufacturers' Division*

At the Annual Meeting of the Tire Manufacturers Division, held at the Yale Club, New York City, on January 8, 1924, Mr. W. W. Duncan, *Manager of Distribution of the Hood Rubber Company,* was elected Chairman, and Mr. G. A. Waddle, *Manager of Dealer Relations of the Goodyear Tire & Rubber Company,* Vice-Chairman, for the ensuing year.

The following named Executive Committee was also elected:

W. W. Duncan, (Chairman), *Hood Rubber Company*
G. A. Waddle, (Vice-Chairman), *Goodyear Tire & Rubber Co.*
J. C. Weston, *Ajax Rubber Company.*
E. B. Germain, *Dunlop Tire & Rubber Corporation*
M. J. O'Donnell, *Falls Rubber Co.*
E. H. Broadwell, *Fisk Rubber Company*
S. S. Poor, *General Tire & Rubber Company*
H. C. Miller, *The B. F. Goodrich Company*
J. H. Kelly, *Hewitt Rubber Company*
W. H. Bell, *Kelly-Springfield Tire Company*
John Kearns, *Lee Rubber & Tire Co.*
F. C. Millhoff, *Miller Rubber Company*
W. B. Miller, *Norwalk Tire & Rubber Company*
S. G. Lewis, *Pennsylvania Rubber Company*
W. S. Wolfe, *Seiberling Rubber Company*
T. F. Walsh, *Swinehart Tire & Rubber Company*
G. S. Shugart, *United States Tire Co.*

Mr. L. N. Southmayd, *Assistant Sales Manager of the Fisk Rubber Company,* was elected Chairman of the Cycle Tire Committee—Tire Manufacturers Division at the Annual Meeting of that group held on January 7, 1924.

Mr. W. H. Sorn (*Goodyear Tire & Rubber Company*) was elected Chairman of the Service Managers Committee of the Tire Division and Mr. L. F. Matthews (*Hood Rubber Company*) Vice-Chairman.

### *Footwear Division*

The Footwear Division held its Annual Meeting at the Union League Club, New York City, on January 7th. Mr. George H. Mayo, *Vice-President of the United States Rubber Company,* and Mr. F. S. Dane, of the *Hood Rubber Company,* were elected to the offices of Chairman and Vice-Chairman of the Division, respectively, for the Year 1924.

## Rubber Broadcasting

**Crude rubber quotations are one of the latest additions to the daily broadcasting itinerary of the Union Trust Company's radio station in Cleveland, Ohio.**

**"Listeners in" are now able to tune in on WJAX on a wave length of 389 meters and hear the latest prices for ribbed smoked sheets, first latex crepe, Nos. 2 and 3 amber crepe, rolled brown crepe, upriver fine, upriver coarse and caucho ball. In addition to the domestic prices latest cabled quotations from London are given. These prices are being broadcasted daily, except Saturday and Sunday at 3.33 p. m.**

**The idea was suggested by Messrs. White-Seiberling and Company, crude rubber brokers of Akron, who supply the quotations and who report that judging by the number of people who are availing themselves of this means to keep in touch with the crude rubber market it is proving a great success.**

### *Mechanical Division*

The Annual Meeting of the Mechanical Rubber Goods Manufacturers Division was held on January 8th. The following officers and members of the Executive Committee were elected:

C. E. Cook (Chairman), *The B. F. Goodrich Company*
C. D. Garretson, (Vice-Chairman), *Electric Hose & Rubber Co.*
J. A. Lambert, *Acme Rubber Mfg. Company*
G. E. Hall, *Boston Woven Hose & Rubber Co.*
D. R. Burr, *Goodyear Tire & Rubber Company*
J. H. Kelly, *Hewitt Rubber Company*
J. H. Cobb, *N. Y. Belting & Packing Co.*
J. H. Connors, *Republic Rubber Corp.*
C. C. Case, *United States Rubber Co.*
F. D. Voorhees, *Voorhees Rubber Mfg. Co.*

### *Rubber Reclaimers Division*

The following officers and members of the Executive Committee were elected by the Rubber Reclaimers Division of the Association at its Annual Meeting held on January 7, 1924:

Chairman, Clark W. Harrison, *Bloomingdale Rubber Company*
Vice-Chairman, L. J. Plumb, *U. S. Rubber Reclaiming Co.*
Executive Committee, E. A. Anderson, *Rubber Regenerating Co.;* J. S. Clapp, *E. H. Clapp Rubber Co.;* G. E Hall, *Boston Woven Hose & Rubber Company;* J. S. Lowman, *Philadelphia Rubber Works Co.;* J. F. McLean, *Pequanoc Rubber Company.*

### *Traffic Committee*

The following officers and members of the Executive Committee of the Traffic Committee of the Association were elected at its Annual Meeting held on January 8th:

R. P. Bowe, (Chairman), *Goodyear Tire & Rubber Co.*
E. C. Webster, (Vice-Chairman), *Hood Rubber Co.*
Geo. F. Hichborn, *United States Rubber Company*
H. J. Zimmerman, *The B. F. Goodrich Company*
A. D. Phillips, *Fisk Rubber Company*
L. H. Ley, *Kelly-Springfield Tire Company*
E. L. Morgan, *Miller Rubber Company*
F. R. Stoughton, *Pennsylvania Rubber Company*
J. A. Moore, *Ajax Rubber Company.*

### *Hard Rubber Division*

Mr. McConnell Shank, of *The B. F. Goodrich Company,* was elected Chairman of the Hard Rubber Division for the Year 1924 at the Annual Meeting of that group held on January 7th.

### *Foreign Trade Division*

The following officers and members of the Executive Committee of the Foreign Trade Division of the Association were elected at its Annual Meeting held on January 7, 1924.

Chairman, K. S. Chamberlain, *Fisk Tire Export Company*
Vice-Chairman, C. E. Wagner, *Miller Rubber Company*

EXECUTIVE COMMITTEE

(Ex-Officio) A. G. Cameron, *Goodyear Tire & Rubber Export Co.*
A. R. Gormully, *Ajax Rubber Company, Inc.*
H. G. Lubke, *General Tire & Rubber Company*
E. H. Huxley, *United States Rubber Export Co.*
H. A. Reed, *Kelly-Springfield Tire Company*
F. E. Titus, *The Intern'l B. F. Goodrich Corp.*

### *Rubber Sundries Division*

The following officers and Executive Committee of the Rubber Sundries Manufacturers Division were elected to serve for the Year 1924, at the Annual Meeting of that group held on January 8th:

W. S. Davison (Chairman) *Miller Rubber Company*
C. A. Blake (Vice-Chairman), *United States Rubber Co.*

EXECUTIVE COMMITTEE

P. R. Wesley, *Davol Rubber Company*
W. H. Balch, *Faultless Rubber Company*
H. A. Bauman, *The B. F. Goodrich Company*
Myron H. Clark, *Tyer Rubber Co.*
G. B. Hodgman, *Hodgman Rubber Company*

### *Clothing Mnfrs. Division*

The Clothing Manufacturers Division met on January 7th and elected to the Chairmanship, Mr. A. L. Viles, General Manager and Secretary of the Rubber Association. Mr. Harvey Willson, Assistant General Manager of the Association was elected Vice-Chairman.

### *Auto Fabric Division*

The Automobile Fabric Manufacturers Division elected Mr. J. C. Haartz, of *The J. C. Haartz Company,* as its Chairman, and Mr. H. A. Lindsey, of *E. I. duPont de Nemours & Company,* Vice-Chairman, for the ensuing year.

# G. B. GRIFFIN ELECTED PRESIDENT OF M.A.M.A.

**Westinghouse Man Succeeds Rutherford As Head of Association For 1924—All Directors Re-elected—Change in Ranking of Officers.**

G. Brewer Griffin, Manager of Automotive Equipment Department of the Westinghouse Electric and Manufacturing Company, Springfield, Mass., has been elected President of the Motor and Accessory Manufacturers Association, according to an announcement made by M. L. Heminway, General Manager.

Mr. Griffin succeeds W. O. Rutherford, Vice-President, B. F. Goodrich Rubber Company, Akron, Ohio, who has been President for the last year, and who will still retain his place on the Association Board of Directors.

Mr. Griffin began his automotive career in 1912 when he organized the automotive department of the Westinghouse Electric and Manufacturing Company at East Pittsburgh, Pa.

Under Mr. Griffin's direction the automotive interests of Westinghouse have become world-wide in scope, with a modern plant at East Springfield, Mass., devoted exclusively to manufacturing starting, lighting, and ignition systems.

Mr. Griffin's organization ability was further displayed by his efforts in bringing to life the Fan Manufacturers Association, the Arc Lamp Manufacturing Association, and the Automotive Electric Association, of which he was president for four years. He is also a member and past president of the Illuminating Engineering Society and is an active member of the Society of Automotive Engineers, the Engineers' Club of New York, Nyasset Club of Springfield, Mass., and the Detroit Athletic Club.

Mr. Griffin was born in Worcester, Mass., and received his early education in public and private schools there and in Boston. He entered the employ of the Westinghouse Company in 1900 as salesman in New York City; later was illuminating specialist in Boston territory, and in 1902 became manager of the Supply Department in East Pittsburgh. He has been secretary and assistant treasurer of the Association for a number of years.

*Directors Re-elected*

All Directors whose terms expired were re-elected at the Annual Meeting so that the Board remains absolutely the same. The resignation of Mr. Rutherford and the election of Mr. Griffin to the Presidency, however, made necessary only a few changes in the ranking of officers. A. W. Copland, President, Detroit Gear and Machine Co., Detroit, Mich., continues as First Vice President; H. L. Horning, Secretary and General Manager, Waukesha Motor Co., Waukesha, Wis., as Second Vice-President; E. P. Hammond, President, Gemmer Manufacturing Co., Detroit, Mich., as Third Vice-President.

J. M. McComb, Vice-President, Crucible Steel Company of America, becomes Secretary and Assistant Treasurer instead of Mr. Griffin. L. M. Wainwright, President, Diamond Chain and Manufacturing Co., Indianapolis, Ind., who has been treasurer of the Association for more than 15 years, continues in this capacity.

Besides the directors and officers already named, the Board of Directors of the Association includes the following: E. H. Broadwell, Vice-President, Fisk Rubber Co., Chicopee Falls, Mass., C. H. L. Flintermann, Vice-President, Detroit Pressed Steel Co., Detroit, Mich., C. E. Thompson, President, Steel Products Co., Cleveland, Ohio, E. P. Chalfant, Chairman of the Board, Gill Manufacturing Co., Chicago, Ill., Eugene B. Clark, President, Clark Equipment Co., Buchanan, Mich.

G. B. Griffin, *Newly Elected President M.A.M.A.*

## Lincoln Gets Glove Order

John Hadfield, president of the Lincoln Rubber Company of Barberton, Ohio, announces that his company has just closed a large contract with a San Francisco firm for surgeons gloves, and that work has been started on the order.

At the present time Lincoln is manufacturing only surgeons gloves, these being a patented article with an especially flexible knuckle, but plans are under consideration to expand the output by the addition of another article. Rumor has it that the company will make rubber paving bricks, but this was neither confirmed or denied by Mr. Hadfield.

## Davis Heads Chemists

C. E. Davis, chief chemist of the National Biscuit Company, has been elected chairman of the New York section of the American Chemical Society for 1924. He succeeds Dr. Charles A. Browne, recently appointed chief of the United States Bureau of Chemistry. P. A. Levene, of the Rockefeller Institute, was made vice-chairman, and D. H. Killeffer, secretary-treasurer.

## IMPACT TESTS ON TIRES NOW BEING CONDUCTED

About the middle of 1923 the Bureau of Public Roads, Washington, began tests to determine the effects of various types and sizes of tires and vehicles on different kinds of roads. The purpose of this research work is to secure accurate information concerning loads, speeds and desirable tire widths for use in connection with the enactment of federal, state, county and municipal legislation governing automobile traffic. At the request of Thos. H. MacDonald, Chief of the Bureau, the Rubber Association appointed a committee to join with the Society of Automotive Engineers in cooperating with the Bureau on the work. Subsequently, a technical representative from the tire industry was loaned to the Bureau of Public Roads to assist in the supervision and conduct of the experiments.

The work seems naturally to divide itself into two important phases—one the measuring of the impact produced by the several types of tires and trucks, and the other the determination of the stress and deflection of the pavement.

Considerable preliminary work has been done in the direction of developing thoroughly accurate instruments for use in conducting the experiments and there is every reason to anticipate in 1924 some unusually important results from this research.

## McKone Tire to Continue

Officials and stockholders of the McKone Tire and Rubber Company, Millersburg, Ohio, have elected to continue to operate the company's plant in that city. At the same time a $100,000 bond issue was decided upon. For some time the company has been undecided whether to continue operations or to sell out to another concern.

## Denman-Myers Convention

The annual sales convention of the Denman-Myers Cord Tire Co., Warren, Ohio, was held recently at the company's headquarters. President Walter E. Myers said that the company has made a record in 1923 to be proud of and predicted better things for 1924.

## Cooper On Full Time

Operations of the Cooper Corporation, Findlay, Ohio, have been resumed on full time, according to announcement by J. F. Schaefer, manager of the factory. Production has been increased from 400 to 600 tires a day. This increase was forced by customers' demands, many large orders having been received since the first of the year.

## Scottdale, Pa., Plant Sold

Sale of the Sherman-Stiveson Tire and Rubber Company's plant at Scottdale, Pa., to directors has been confirmed. It is reported that additional funds necessary to reopen the plant on a producing basis have been secured and that Ohio interests will shortly place operations in the hands of experienced men.

## MASON CONFIRMS LARGE TIRE ORDER FROM FORD

Trade rumors of a big Ford order for 50,000 Mason tires a month have been officially confirmed by The Mason Tire & Rubber Company, Kent, Ohio. Mason is one of four companies furnishing Ford with tires. This is an enlarged repeat order, it is said.

Production at the main Mason tire plant at Kent, Ohio, has been greatly increased and the Mason tire plant at Bedford, Ohio, has been ordered into full day-and-night operation, and maximum 24-hour capacity will be obtained at the earliest possible moment. The textile mill at Quitman, Ga., is running at 100%, day-and-night, 24-hour production capacity; and instructions have been issued to the textile mill at Millen, Ga., to get ready for full production. These two Georgia cotton mills are owned by an allied company, the Western Reserve Cotton Mills.

This activity is due partly to the increased Ford order and partly to the demand for the new Mason "Safety First" Cord. D. M. Mason, General Manager of The Mason Tire & Rubber Company, predicts that 1924 will be the greatest sales year in Mason history, and that this increase in Mason's business is indicative of what will happen with all the leading tire manufacturers early in 1924.

## New Electric Controller

The C. J. Tagliabue Mfg. Co. announces the addition of an Electric Contact type Temperature Controller to its line of indicating, recording and controlling instruments.

This Electric Contact Controller consists essentially of a dial-indicating thermometer, the pointer of which is actuated by the usual mercury, vapor-tension, or gas-filled thermostatic system, depending on the desired range and other specifications. The bulb stem is inserted in the oven, furnace, tank or other apparatus where the temperature is to be controlled and is connected by a capillary tube to the case which can be mounted at any convenient location. As the temperature at the bulb increases or decreases, the thermostatic spring uncoils or recoils, thus moving pointer across the scale. The exact temperature existing at the bulb is thus indicated at the case and the responsiveness and closeness of the control may be determined.

The case is Japanned-iron with a nickeled-brass door, 8″ in diameter.

## Perfection Plant to Be Sold

The plant and properties of the Perfection Tire and Rubber Company, Fort Madison, Ia., will go under the auctioneer's hammer late this month, it has been announced by receivers of the concern. The company was forced into bankruptcy about a year ago when creditors claims of $2,000,000 were pressed. It is believed that most legitimate claims will be taken care of, but feared that stockholders will receive nothing.

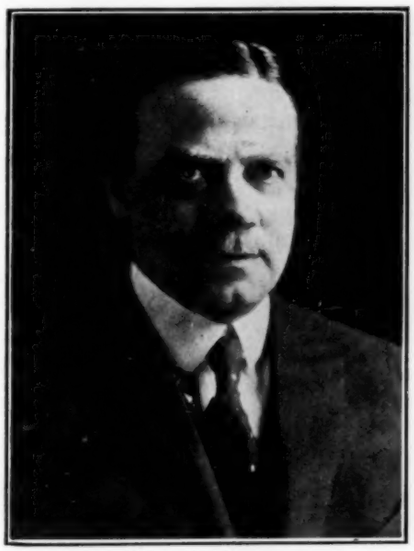
## Co-operating with Rubber Association

**One of the outstanding conditions developed during 1923 was the very decided increase in the number of individuals participating in the activity of the Rubber Association. In the case of nearly every Committee and Division there were additions to the list of those who actively interested themselves in the matters under consideration. This obviously is a very gratifying tendency.**

**Many of our members are fast realizing that there is an important cumulative effect to co-operative activity through an association, in that the successful undertaking of one problem almost invariably indicates the desirability (if not the absolute necessity) of handling one or several related problems. Furthermore, the satisfactory solution of any difficulty by co-operative effort naturally strengthens the confidence and stimulates the interest of members and inevitably encourages them to attempt additional projects which might a short while before have seemed to them thoroughly impracticable.—**

*From the report of* 1923 *activities of the Rubber Association, by Mr. A. L. Viles*

## *Elected Chairman of Board*



J. C. Weston

## Weston Is Ajax Chairman

J. C. Weston, president of the Ajax Rubber Company, New York City, has been elected chairman of the board. E. L. Fries, treasurer, has been elected secretary in addition to his other position, G. E. Shipway, former assistant to chairman of the board, has been elected vice-president and general manager. Enders McVoorhees, auditor, has also been appointed assistant to the president and chairman. Following the directors' meeting, Mr. Fries stated that Ajax entered the new year free of bank debt and that all seasonal borrowings, which at peak were just below $2,000,000, had been liquidated.

## Junior Technology Examinations

The United States Civil Service Commission announces open competitive examinations for junior engineer, junior physicist and junior technologist on March 5, 1924. These examinations will be held in a number of cities throughout the country, a list of which may be obtained on application to the Commission at Washington, D. C.

Vacancies in the Bureau of Standards, Department of Commerce at Washington, D. C., or elsewhere at salaries ranging from $1,200 to $1,500 a year, plus bonus, and in positions requiring similar qualifications at these, or higher or lower salaries, will be filled from these examinations. All citizens of the United States who meet the requirements, both men and women, are eligible for the examinations.

Applicants must show they have been graduated with a degree from college or university of recognized standing or that he is a senior student in such an institution and furnish proof of actual graduation within three months from the date of the examination.

In the case of junior technologist examination will be given in optional subjects which includes general, leather, oil, paper, rubber and textile technology.

## Beacon Reorganization

The Beacon Tire and Rubber Corporation has purchased from the receivers all the plant property, goodwill, etc., of the Beacon Tire Co., Beacon, N. Y. The new company will manufacture Beacon Toron-treated Cords. These tires will be equipped with the Dimpled Pneumatic Compression Leak-Proof Tube, which is also being manufactured by the new company.

Officers of the new company are: F. W. Warner, president; W. B. McCallum, vice-president; A. A. Archbold, secretary. Directors, in addition to the foregoing are: D. H. Crowley and E. C. Griffith.

## A. L. WENDOVER DUNLOP MANAGER FOR NEW YORK

Alfred L. Wendover of Mt. Vernon, N. Y., has been appointed manager of the New York City branch of the Dunlop Tire & Rubber Company according to an announcement recently made by E. H. Kidder, general sales manager. Mr. Wendover, who has been active in the tire and rubber business since 1906, has been a supervisor in Westchester county for 10 years, and at present is chairman of the Transit commission which is contemplating installing bus lines throughout the county. In addition he is chairman of the county park commission on good roads and parks. This body expects to spend $10,000,000.00 establishing parks

Alfred L. Wendover

and better roads for the thousands of motorists in that district.

Mr. Wendover started his business career as salesman for the Morgan Wright Tire Company of New York City as a local salesman. He continued in that capacity until 1910 when the firm was consolidated with the United States Rubber Company, by which concern he was retained until acceptance of his present place. He is one of the oldest tire salesmen in point of service in the metropolis.

Following a recent visit to the Dunlop works at Buffalo, N. Y., Mr. Wendover announced that he would establish temporary headquarters at No. 25 W 45th St. which is the metropolitan distributing offices for Dunlop Golf Balls, and that within a month would have a permanent office and warehouse.

The same sales force that has been identified with Dunlop's New York branch will be retained. It consists of Harrison Mills, George J. Tugwood, Charles Seiler and H. K. Simmons.

Mr. Wendover succeeds William C. Blake.

## Faultless Insures Employees

About ninety persons employed by the Faultless Rubber Company, Ashland, Ohio, received a Christmas present in the form of a $500 insurance policy. This brought the total insured by the company to 259. The group plan under which the Faultless employees are insured provides for an initial policy of $500 on each employee who, at the time of donation, has been with the company for six months. Annually thereafter this insurance is automatically increased $100 on each policy until $1,000 is reached. If the employee leaves the service of the company the insurance becomes non-effective. The company is now paying premiums on 45 employees who have $1,000 policies, having been with the company five years or longer.

## *L. F. Smith*

L.F. Smith, for many years identified with the rubber industry in Akron, died at Albuquerque, N. M., on January 3. Mr. Smith was one of the founders of the Amazon Rubber Co., of Akron, and at the time of his leaving Akron in 1919 was vice-president and factory manager of the company. Prior to the organization of the Amazon company Mr. Smith was superintendent of the Marathon Tire and Rubber Co. of Cuyahoga Falls, Ohio. He had also been with the Miller Rubber Co. and B. F. Goodrich Co. in Akron. Funeral services were held in Akron on January 8, under the auspices of the Masonic order of which Mr. Smith was a member.

## RUBBER EXHIBITS IN SMITHSONIAN INSTITUTION

Considerable progress was made during 1923 by the Rubber Association in the work of planning and assembling the rubber industry exhibit which is to be placed in the Smithsonian Institution. This is a project which was started during the latter part of 1922 and is now nearing completion. A survey of the industry was made by a representative of the Smithsonian Institution which involved visits by him to several representative factories in each branch of the rubber manufacturing business. Based upon his observations, a comprehensive list of photographs and specimens was requested by the National Museum and these articles are being procured by the Association from its members and shipped to the Smithsonian Institution for mounting and display. This work is unquestionably worth-while because the only rubber exhibit at the Museum for years has been a very inadequate assortment of products which is not at all representative of the rubber industry of today.

## Rubber Machinery Seized

Machinery of the Corrugated Rubber Co., Poughkeepsie, N. Y., has been seized on a judgment for about $7,500 obtained by the Vaughn Machinery Co.

## GENERAL TIRE EARNS $30 ON COMMON STOCK

Several promotions in the official circle featured the annual meeting of The General Tire & Rubber Co., held recently, at which a most successful year was reported and still better prospects for 1924 announced. The promotions referred to were the elevation of Wm. O'Neil from Vice President and General Manager, to President and General Manager, the election of C. J. Jahant, Superintendent, to Vice President, the election of W. E. Fouse, Secretary, to be a Vice President and the election of T. F. O'Neil, hitherto a director, to be Secretary.

M. O'Neil, President of the Company since its formation, retired from the presidency, but remains Chairman of the Board of Directors. Charles Herberich was re-elected Treasurer, W. E. Fouse will function as Assistant Treasurer, and W. J. Cahill was re-elected Assistant Secretary. Thus there was really no change in the official personnel, except the advancement of men who have been with the organization since the beginning and who have earned promotion.

Net earnings for 1923 were reported as $1,200,000.00 on gross sales of $9,000,000.00. General seeks no original equipment business, and all its distributing is done through dealers. Last year's sales were $7,600,000.00. The business in units was 51 per cent greater than in 1922, according to the report of the general manager, who also pointed out that earnings this year have been equivalent to $30.00 per share on the common stock, which now has a par of $50.00 and is quoted on the market at better than $150.00

Mr. O'Neil also stated in his report that of the $1,200,000.00 earnings $1,000,000.00 was earned the first half of the year and $200,000.00 the second half of the fiscal term, which closed Nov. 30.

The financial statement shows that though the company declared a 100% stock dividend a year ago, has always paid its cash dividends regularly on both preferred and common and also declared a special 6% cash dividend on common just before Christmas, the surplus has been built up close to $900,000.00 during the year. Incidentally the company paid for three new plant additions out of this year's earnings, aid retired some $90,000.00 of preferred stock—three times the charter requirements.

"We have again maintained our report," Mr. O'Neil summed up the situation. "We have not laid off an employee since 1920 because of slack production or demand, and we have never omitted the payment of a single dividend on either preferred or common stock." The financial statement follows:—

CONDENSED BALANCE SHEET

| *Assets:* | Nov. 30 1923 |
|---|---|
| Cash on Hand and in Banks | $ 205,339.00 |
| Liberty Bonds | 450,483.47 |
| Notes & Accounts Receivable | 1,917,247.87 |
| Inventory | 920,141.90 |
| Investments | 7,005.40 |
| Real Estate, Buildings & Machinery | 707,966.70 |
| Furniture, Fixtures & Automobiles | 26,844.74 |
| Patents | 1.00 |
| Deferred Charges— | |
| Supplies & Insurance | 7,776.56 |
| Total Assets | $4,242,806.64 |
| *Liabilities:* | |
| Accounts Payable, Accrued Payroll & Excise Tax | $ 210,594.25 |
| Reserve for Insurance & Taxes | 90,649.27 |
| Capital Stock Outstanding— | |
| Preferred | 1,072,100.00 |
| Common | 1,993,150.00 |
| Surplus | 876,313.12 |
| Total Liabilities | $4,242,806.64 |

## WRITS ISSUED AGAINST DUNLOP RUBBER HEADS

Internal dissention in the Dunlop Rubber Company, the largest tire manufacturing concern in Great Britain, which has grown out of charges of mismanagement following large financial losses in 1921 has taken a new turn, according to press advices from London. It is reported that shareholders at a recent meeting approved the action of the executive board in issuing writs against the company's president Sir Arthur Ducros and other directors. It is said that five writs covering ten names have been obtained, all but two of which have been issued. Sir Arthur Ducros, in retaliation, is reported to have signified his intention of pushing the litigation against the company. It is said he has obtained a writ against the company for confirmation of an agreement by which he receives £2,000 a year in an advisory capacity. Two other directors, it is understood, have begun similar proceedings. Reports that Sir Arthur has made any proposals for an out-of-court settlement of the difficulties have been denied by him, although Sir Eric Geddes, who is a director of the Dunlop company, has stated that arrangements have been made for a settlement of all cases.

The present trouble of the Dunlop Rubber Company started early in 1921 when the American subsidiary at Buffalo was forced to practically cease operations. A statement issued at that time ascribed the situation to conditions in the automobile industry. The company's statement for the fiscal year ended August 31, 1921, showed a staggering loss of about £2,000,000, which was more than half of the company's common capital. Directors blamed this on depreciation of raw materials bought under long time contracts. Shareholders ordered investigation of the loss and the present trouble is said to be an outgrowth of that investigation.

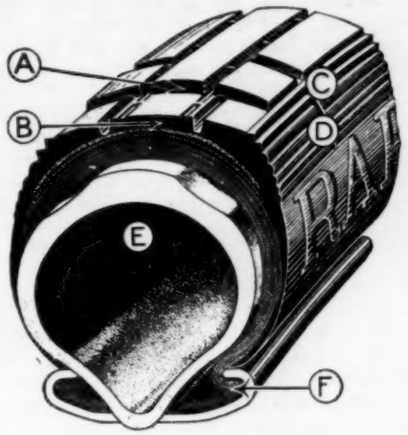
## Rubber Export Values

The unit values of exports in November showed few noteworthy changes. The value per inner tube for automobiles increased from $1.81 in October to $2.18 in November; the value per pair of rubber boots increased from $2.33 to $2.59; the value per pound of soles and heels increased from $0.324 to $0.376, and of tire repair materials from $0.443 to $0.503. Automobile solid tires were valued at $24.36 each as compared with $26.33 in October, and casings at $11.98 as compared with $12.15. In the mechanical rubber goods classes there were slight but unimportant recessions in price.

## Candee Rubber Resumes

The plant of the L. Candee Rubber Company, New Haven, Conn., which was closed down for the holidays, has reopened on a four day-week basis. A change in schedule so as to provide increased operating time for employees is expected to be made shortly, however.

### Rapson Double Tread Tire




*A—First or upper non-skid tread of normal depth.*
*B—Second or lower non-skid tread of same depth as upper tread.*
*C—Anti-skid side ribs.*
*D—Heavy tread rubber side ribs for running in ruts, and to strengthen shoulder.*
*E—Deflector Tube of heavy section at tread and base.*
*F—Extra-strong beads.*

## Mid-West Rubber Annual Dinner

The fifth annual dinner of the Mid-West Rubber Manufacturers' Association will be held at the Hotel Morrison, Chicago, Ill., on Tuesday, January 29, 1924.

The general meeting, luncheon, board of directors and executive meetings will be held the same day. Members are requested to make reservations for the dinner as early as possible with C. S. Sutherland, Secretary, 64 West Randolph St., Chicago.

## Quaker City Centralizes

The Quaker City Rubber Co. announces the removal of all departments of its organization to the factory at Wissinoming in Philadelphia, Pa., on the New York Division of the Pennsylvania Railroad.

The company has made this change in order to facilitate and expedite the transaction of its business.

## British Tire Imports to October

A total of 1,030,208 pneumatic casings valued at £2,288,982 were imported into Great Britain and Northern Ireland during the first nine months of 1923. United States led in value of exports with £728,736, while Italy and France were not far behind with £564,335 and £544,587.

Inner tube imports amounted 1,747,505, valued at £288,285. France was ahead of America with shipments valued at £100,661 against £94,578. Solid tire imports in the number of 44,879 were valued at £184,579, United Stated leading with £94,930 and France second at £33,802.

## TIRE WITH TWO TREADS PRODUCED BY RAPSON

**British Manufacturer's Invention Shows Remarkable Results In Endurance Tests —Extra Tread Adds No Weight.**

Mr. Lionel Rapson, of the Rapson Tire and Jack Company, London, England, has invented a double tread tire, which he claims will add considerably to the life of the casing.

The London *"Daily Mail"* makes the following comments on the new invention:

"The chief asset of the invention is its simplicity. The new tire has two non-skid treads instead of one. As soon as the first tread begins to disappear another tread comes up to take its place. It gives the tire, in effect, a second set of teeth with which to bite the road when the first set has worn away.

"For the last 30 days a 40-h.p. car has been racing round the hard concrete track at Brooklands to test the new invention. On this car the second set of teeth is just beginning to show and they look healthy specimens.

"The question of the life of the tread has always been the difficulty of the modern cord tire. It is certain that the life of the casing is greatly in excess of the tread, but as soon as the pattern of the tread has disappeared the average motorist wisely discards the tire, for it is useless as a non-skid.

"This means that merely on account of the loss of the non-skid effect a good casing and several thousand miles of wear in tread rubber is being wasted.

"The new double tread adds nothing to the weight of the tire.

"If you look at a tire when the non-skid pattern has worn away you will note that there is still a good thickness of rubber left before you come down to the casing. It is in this layer of rubber that the second tread pattern is woven during the process of building up the tire.

"Until the second pattern comes into operation the grooves and cross-grooves which form it are filled with a pliable rubber filling. As soon as the first tread is worn through the rubber filling falls out and the second tread comes into action."

The tire was recently exhibited at the London Motor Show on November 3, 1923, and to the ordinary observer the tire is exactly as shown in the accompanying cut. A representative of the Rapson company stated to a member of the American Consulate General at the Motor Show that it was hoped to have the manufacture of these tires on a production basis by January, 1924.

The new tire recently did 40,000 miles on a special test, and it is said that a mileage of 20,000 to 25,000 should be quite within the range of possibility in ordinary touring work.

## Firestone Manager Transfers

C. T. Barnes, former manager of the Firestone Tire and Rubber Company, Chicago, has been made manager of the Toledo branch.

## U. S. RUBBER HOSPITAL PROGRESS IN FAR EAST

A noteworthy paper ,disclosing how aggressive medical and sanitation work have combatted tropical diseases on the great rubber plantations of the United States Rubber Company in the Far East to a point where the death rate is now no higher than in the average American city, was read by Dr. W. D. Doorenbos, chief doctor of the plantations at a recent session of the Far Eastern Association of Tropical Medicine at Singapore.

Under a system of strict control, many forms of disease which usually are very troublesome in the tropics have been virtually eliminated.

The company operates on one of its plantations in Sumatra the largest hospital in the Far East. The hospital is centrally located with reference to the rest of the properties. There is accommodation for at last 800 patients. All sick people are sent to the hospital. including those slightly sick. This centralization is the most important feature of the entire health control.

Contaminated drinking water is one of the chief menaces to health in the East, the natives apparently having little conception of the necessity for the prevention of pollution. By having abundant supplies of free tea constantly at hand for the workmen on the plantations, it has been possible to reduce to a minimum the use of water for drinking purposes.

There is a monthly inspection of all children. Twice a year the entire population is examined for malaria, skin diseases, eye diseases, etc., and receives a hookworm treatment. The living quarters of the laborers are visited without notice once in three months and the control is very strict. At all of these inspections, anyone found sick is sent to the hospital.

The number of typhoid and dysenteric cases is very low. Hookworm is not now of much importance. Scabies disappeared after the regular children inspections were established. At the first inspection, about a thousand children were found sick with this disease and were treated. The number of malaria sick coolies has dropped from a monthly percentage ranging from 2.21 to 9.23 throughout 1917 to 0.26 in May of this year.

There is a special maternity ward in connection with the hospital and from twenty to thirty babies are born there each month.

A card system for the entire labor force of 11,000 laborers in addition to 2,500 women and as many children is kept at the hospital. This shows every item of importance in the laborer's physical history since entering the company's employ.

## Films Show Firing Methods

"Movies" demonstrating in detail all operations and methods of firing the large furnaces of the type used in the Akron plant of the B. F. Goodrich Co. were shown to employes recently.

The films were made by the Rubber Association of America and comprise two reels, each of 1,000 feet. They were made for the purpose of showing employes of the boiler department all details of making steam for the plant. Over 40,000 horsepower is produced in steam and electrical energy by the Goodrich plant daily and its use ranges from freezing gold ball centres at 40 degrees below zero to vulcanization of rubber at 400 degrees above zero.

## RUBBER SPRING SHACKLE ATTRACTING ATTENTION

A striking window display to illustrate the effectiveness of the rubber spring shackle is attracting wide attention at the United States Rubber building, 1790 Broadway, New York City.

The rubber insulator is gradually

**Exhibit of Rubber Insulators in U. S. Rubber Co. Window, New York City**

establishing itself, in the opinion of automotive engineers. The device replaces the conventional steel shackle arrangement for springs on passenger cars and commercial vehicles. Cars equipped with it may be described as literally floating on eight blocks of live rubber. The spring ends rest in a bed of rubber which is held under compression. Ordinarily the insulators require no attention during the life of the car. They make a car practically noiseless and eliminate most of the shocks. The chief advantages, of course, are that metal to metal contact between the running gear and frame is eliminated and there is no necessity for lubrication of the spring pads.

Insulators mounted on a taxicab have already performed up to 78,000 miles with only slight deterioration and a set on a Mack bus has made over 200,000 miles.

One of the features of the window display is an especially constructed seismograph which was developed for the purpose of registering vehicle vibration, and graphic chart shows the vast reduction in vibration in cars equipped with rubber shackles over cars not so equipped.

## 8,000 Germans Coming to Akron

According to reports printed in the German language press of this country about 8,000 persons in Germany are preparing to come to Akron next spring to work in the Goodyear-Zeppelin plant. According to officials of the Goodvear Tire and Rubber Company these workers are coming of their own accord, if at all.

## STOCKS AND SHIPMENTS OF TIRES DOWN IN NOVEMBER

November production of pneumatic casings, as reported by 55 manufacturers to the Rubber Association of America, Inc., totaled 2,399,725, which was the largest of any month since June, 1923, though smaller than for any preceding similar period since February 1922. It compares with 2,361,340 casings reported by 59 manufacturers for October, 2,029,-581 reported by 60 manufacturers for September and 2,733,134 by 62 manufacturers for November, 1922.

Shipments of 2,456,296 casings in November compare with 2,819,583 in October and are the lowest for any month since November 1922 when the total was 2,379,708. These figures include only stock forwarded to a purchaser and does not include stock forwarded to a warehouse, branch, or on a consignment basis, or abroad.

Inventory also fell to a new low point for the year at 4,689,329, and the lowest for any month since December 31, 1922, when a total of 4,599,208 was reported by 59 manufacturers. In October 1923, 59 manufacturers reported inventory of 4,876,352 casings. The total for November, 1922, as reported by 62 manufacturers was 4,964,976.

Production of 3,451,716 inner tubes by 53 manufacturers in November last year was the smallest of any month, except September, since December 1922 when 3, 411,074 tubes were turned out by 59 manufacturers. Tube production in October, 1923, by 55 manufacturers was 3,855,244.

Tube shipments for November amounted to 3,422,426. This was the smallest movement for any single month since May, 1923, when the total was 3,414,115. The peak of shipments for the first eleven months of the year was reached in August with 4,304,034 by 53 manufacturers.

Inventory also was the smallest for any month, save September, since January, 1923. The total reported was 6,693,639 against 6,898,425 by 55 manufacturers in October and 6,210,053 by 61 in November, 1922.

Eleven manufacturers reported a total of 32,577 solid tires produced in November last year. This was substantially the smallest for any month covered by the report which dates back to January, 1922. It compares with 37,285 produced by 10 manufacturers in October and a high record for the 23 months under review of 85,775 attained just one year previously, reported by 11 manufacturers.

November solid tire shipments of 49,471, however, were above those for any month since June, 1923. But they were considerably less than those of November 1922 with a total of 61,466 reported by 11 manufacturers. The peak of shipments for the two years was reached in March, 1923, with 77,144 tires.

Inventory, as of November 31, 1923, was the smallest since October 1922, the totals being 213,686 and 213,942, respectively. The peak of stocks was attained at 283,425 in June 1923. (*Figures on Page 306*)

## AMERICAN PARTICIPATION IN RUBBER EXHIBITION

In the summer of 1923 the Rubber Association was invited to participate in the Sixth International Rubber Exhibition to be held in Brussels in April, 1924. After careful consideration of the matter by the Board it was concluded to accept the invitation and a committee was appointed to recommend plans for an exhibit by the rubber industry of the United States, through the Association.

That committee has suggested that the primary effort of the exhibit by the American rubber industry should be in the direction of clearly and comprehensively conveying to the rest of the world a realization of the importance and magnitude of that industry. Consequently it is planned to develop a statistical exhibit, which will be supplemented by a group of photographs of some of the manufacturing plants in this country with perhaps a limited number of specimens of the rubber products produced in the United States.

The detail of accumulating and arranging the exhibit is to be placed under the supervision of a gentleman who is thoroughly competent, both from the standpoint of familiarity with the rubber industry and ability to speak several foreign languages and to properly fit the Rubber Association's exhibit into the conditions surrounding the International Exhibition.

## Garden Hose Specifications

Late in 1923 the Mechanical Rubber Goods Manufacturers Division of the Rubber Association decided to recommend the adoption of the ⅝ inch diameter garden hose as standard. A Sub-Committee appointed to handle this matter has been in touch with the National Retail Hardware Association and the National Hardware Association, dealers and jobbers organizations respectively, to obtain their support of the plan. It is expected that shortly after the first of the year definite steps will be taken to make the recommendation effective. The Division has requested the Association's Board of Directors to appropriate $5,000 to defray the expense of an educational campaign in behalf of the ⅝ inch hose as standard.

## Canadian Tire Output Slows

The tire industry in Canada had a successful year and appears to have avoided overproduction. Most of the Canadian companies have now reduced production for the present season, it being inadvisable to carry over a stock of tires for five months until the new season opens, especially since there may be a variation in demand making it impossible to calculate accurately what will be the proportion of the various types of tires that will be needed in the new season. Two American companies, which began manufacturing in Canada comparatively recently, report a normal production to meet the increasing demand for their products.

## 30,000 RUBBER ARTICLES

**More than 30,000 articles are now made with a rubber foundation and business handled by the rubber industry this year will amount to $900,000,000, according to Dr. W. C. Geer, vice-president of the B. F. Goodrich Co., in an address to the Rotary Club of Akron, Ohio, at a recent meeting.**

**Dr. Geer asserted that the time is coming when we will look back on our present difficulties as mere incidents in the progress of a fast growing industry, and ventured the opinion that the present depression in the tire industry is rapidly clearing up.**

**Dr. Geer supplemented his address with some samples of crude rubber made on the spot from the pure latex, and showed the Rotarians some lantern slides which pictured the progress of rubber from the time it comes from the tree until it is turned out in the form of tires and other products.**

## Rubber Belting in Argentina

The total demand for belting in Argentina is considerable, but only a small percentage is supplied by rubber. The large national production of hides has fostered the development of national industries; about 60 per cent of all leather belting used in the country is made in Buenos Aires.

Prices of domestic manufactured rubber belting are below those for the imported article, this being due to import duties on the latter for protection of home industries. For example a 6-ply 7 to 10 inch imported rubber belting brings 16.20 to 20.30 pesos per metre, while domestic 6-ply 6 to 12-inch belting sells for 9 to 18 pesos.

United States is the principal source of rubber belting exports to Argentine sending 88,409 pounds valued at $45,154 to Argentina in 1922.

For any firm to place a new brand of rubber belting on the market it will be necessary to come to some arrangement with a large distributing house engaged in the import of all classes of belting. Some importers would be willing to purchase outright stocks of the most readily saleable dimensions and qualities, but the manufacturer would have to supply on consignment those in less demand.

Thus the burden of developing the market falls largely upon the manufacturer. He must back his representative by advertising, by credit terms, and to a certain extent by shipments on consignment, if he is to compete successfully with local production and with the foreign manufacturers already established.

## Dunham Mills Close

The Dunham Mills, Inc., of Naugatuck, Conn., have closed down every department save that where lining for rubber footwear is made, and all employees have been discharged.

## EXPORT TRADE IN SCRAP AND RECLAIMED RUBBER GROWING

Early this year the probability of increased export trade in scrap and reclaimed rubber was called to the attention of American firms dealing in these products by the Rubber Division. In the eleven-month periods, 4,145,209 pounds of reclaimed rubber were exported this year as compared with 2,033,435 pounds in 1922, and 12,892,215 pounds of scrap and old rubber as compared with 7,370,288 pounds in 1922. The export prices of both these commodities are steadily mounting, as is shown by the following table of values per pound of exports in recent months:

| | Sept. | Oct. | Nov. |
|---|---|---|---|
| Rubber, Reclaimed | $0.0937 | $0.102 | $0.112 |
| Rubber, scrap and old | 0.0428 | 0.0458 | 0.0482 |

The volume of exports is lower this year than last in only two classes of products shown in the export statistics, namely, hard rubber battery jars and accessories, and rubber thread. Owing to the small shipments of battery jars in November, 28,815 pounds valued at $7,563, as compared with 53,148 pounds valued at $7,243 in November 1922, the volume of trade in this item for eleven months is somewhat less than in 1922. The rubber thread trade experienced a dull period in July, August, and September, but in October and November the trade was again about normal. For eleven months the exports of rubber thread amounted to 856,979 pounds this year as compared with 925,215 pounds in 1922. The trade in druggists' rubber sundries is somewhat less in value than last year, although the volume has increased. Tire repair materials have increased both in quantity and value, as have likewise the exports under the "all other manufactures of rubber" class, which indicates that foreign markets are purchasing increased quantities of rubber specialties of all kinds from America this year.

## National Tire Shows Gain

The Annual Stockholders Meeting of The National Tire & Rubber Company, held at its office in East Palestine, Ohio, on Dec. 15, 1923, at which the old Board of Directors were re-elected unanimously, and the following officers were elected for the ensuing year:

President, C. L. Merwin; Vice President & General Sales Manager, C. E. Miley; Treasurer, C. W. Helman; Secretary, L. M. Kyes.

The company's statement shows an increase in sales of $500,000.00, with net profit from operations of $112,000.00. Assets and Liabilities are as follows:—

| | |
|---|---|
| *ASSETS:* | |
| Current Assets | $476,192.83 |
| Net Property | 227,422.25 |
| Patents, Formulae, etc. | 50,714.85 |
| Deferred Charges to Operations | 4,632.32 |
| | $758,962.25 |
| *LIABILITIES:* | |
| Current Liabilities | $163,553.36 |
| Reserves | 41,507.19 |
| Preferred Capital Stock | 207,800.00 |
| Common Capital Stock | 250,792.00 |
| Surplus | 95,309.70 |
| | $758,962.25 |

## TIRE INDUSTRY SHOWS GENERAL IMPROVEMENT

*(Continued from Page 289)*

weather prevailing in sections that normally are large consumers at this time Akron does not appear to have been so adversely affected, her boot and shoe production being reported at record volume. production of mechanical rubber goods is racing along at a record rate and in view of the outlook for continued high building, transportation and communication activity there is nothing in the present situation to indicate any let-up in this line.

Labor conditions in and around Akron show substantial improvement over a few months ago. Plants generally are not yet employing as many hands as during peak times, due to more economical methods of production, but it is reported that there are few people out of work in Akron. Most of the factories there are using three shifts daily and taking on more workers right along.

The Goodyear Tire and Rubber Company is now said to be turning out nearly 30,000 tires daily as against about 20,000 tires at the same time last year. The company has recently installed new machinery for an additional line of mechanical goods. Preparations are also being made at the factory for the manufacture of Zeppelins under patents recently acquired. Zeppelin engineers are reported to be arriving from Germany to assist in the installation of necessary machinery for this work. Goodyear officials, however, deny the company is importing large numbers of German Zeppelin workmen and have stated that the company plans to draw this help mainly from the ranks of workers now in Akron. Goodyear is also continuing its experiments with rubber paving blocks with the idea of furthering this development which bids fair to become an important branch of the rubber industry in this country. It is said that many inquiries for the purchase of blocks have been received by the company since the first rubber paving was laid in front of the Goodyear plant a few weeks ago. The Lincoln Rubber Company at Barberton has also decided to go into the manufacture of paving blocks and will begin operations within the next few weeks, it is understood.

The B. F. Goodrich Company is reported to be producing about 20,000 casings and 25,000 to 30,000 inner tubes a day. Its plants are operating close to capacity. Increased production and sales are also reported by Firestone, Miller, General, Mason and Seiberling. Most of the companies have booked large orders for original equipment which will keep their factories busy and working at near capacity for some time to come.

Tire officials talk with much pride of the remarkable recovery made by the industry during the second half of 1923. Deficits have been turned into concrete gains as already shown in the earning statements of several companies for the past year. Starting 1923 with balances in the red letter column, most of these concerns were able to report substantial net profits at the close of the twelve month period, and to declare good dividends.

The Goodyear annual statement which will be released late this month is expected to show net earnings of $10,000,000, according to the prevailing belief in financial circles. Certain other companies have reported proportionately greater earnings for the year, and the impression that the majority of established rubber concerns will be able to declare good dividends explains the much firmer tone of the market for rubber company securities.

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## New Beaver St. Brokerage Firm

J. W. Herron, formerly manager of the Akron office of F. R. Henderson and Company, crude rubber dealers of New York, and J. S. Rodenbaugh announce the opening of an office at 25 Beaver St., New York City, under the name of J. S. Rodenbaugh and Company, to conduct a brokerage business in crude rubber as eastern representatives of J. W. Herron and Company, of Akron and E. T. Meyer and Company, of Chicago.

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## Golf Solons Ban Super Ball

Officials of various golf associations throughout the country are understood to have agreed to ban the use for tournament purposes of more lively golf balls than those now generally approved. Recently, it is said, a manufacturer perfected a ball that can be driven fully 50 yards further than the most lively ball now in use. It was decided that approval of this ball would necessitate a rebuilding of courses throughout the country, entailing additional large financial layouts.

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## Nu-Cord Is Incorporated

The Nu-Cord Tire and Rubber Company of Greensburg, Pa., has been incorporated under the Pennsylvania laws with an initial capital of $150,000. The company will manufacture and deal in rubber tires and tubes. This concern succeeds the old Nu-Cord Rubber Company. Stockholders of the new concern purchased the properties of the old some time ago from the receivers.

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## Erie Tire Resumes

After having been closed down for two months the plant of the Erie Rubber Corporation, formerly that of the defunct Erie Tire and Rubber Company, is again in operation at Sandusky, Ohio. Preliminary operations commenced early in January with about 60 men at work. More help will be taken on as rapidly as conditions warrant. Operation of the plant is necessary to take care of current business, according to President C. T. Wilson, who considers the outlook for the new concern bright.

## BALLOON TIRES PLANNED FOR STANDARD RIMS

Following is the list of recommendations made by the Executive Committee, Tire Mnaufacturers Division of the Rubber Association, for oversizing on present standard rims with balloon type or low pressure tires.

Considerable interest has been shown by manufacturers, dealers and users with respect to oversize balloon type tires on standard rims and it is thought that early standardization is particularly desirable and will be as beneficial as similar action in connection with other developments.

The designation of these tires, as set forth below, is urgently recommended as a uniform method of marking.

31x4.40 Balloon Type
Interchangeable with 30x3½ tire
Passenger Cars Only.

32x4.95 Balloon Type
Interchangeable with 30x3½ or 31x4 Tire
Passenger Cars Only.

33x4.95 Balloon Type
Interchangeable with 32x4 Tire
Passenger Cars Only.

33x5.77 Balloon Type
Interchangeable with 31x4 or 32x4½ Tire
Passenger Cars Only.

34x5.77 Balloon Type
Interchangeable with 32x4 or 33x4½ Tire
Passenger Cars Only.

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## Day Rubber Plant Burned

The four-story building of the Day Rubber Company, St. Louis, Mo., has been totally destroyed by fire which for a time threatened the business section of that city. The fire started in the Day plant from an undetermined cause.

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## New Hospital Sheet

The first article to be put on the market by Converse and Company under the rights it has obtained for this country and Canada in the hermetite method of waterproofing cotton fabrics will be a hospital sheet. This sheet, unlike the rubber ones commonly in use, can be sterilized in boiling water and then ironed without losing its waterproof qualities.

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## "Ball-Band" Annual Dinner

About 225 salesmen, executives and heads of departments of the Mishawaka Rubber and Woolen Manufacturing Company recently attended the annual dinner and entertainment for the "Ball-Band" salesmen at Mishawaka, Ind. This dinner is held each year just previous to the departure of salesmen for their respective territories. According to officials the company is now employing about 6,000 workers, turning out 10,000 different lines of rubber and woolen footwear and making 50,000 pairs of boots and shoes a day .

# 1924 Prospects for Crude Rubber

## Review of Past Year Shows Increased Consumption with Bright Prospects Reported for the Coming Year

*By* **Fred B. Peterson**

IN the crude rubber market the year of 1923 came in like a lion and has every present indication of departing like the well-known lamb. In January the price advanced to 38 cents for spot. At the same time the dealers did the largest volume of business of the year with manufacturers. During the latter part of that month the price declined sharply to 34 and a fraction cents. At the same time the manufacturing demand rapidly decreased. From February the price descended by easy stages until it reached the low point of 25 cents in July, since which time it has been hovering around 27 cents with no very spectacular fluctuations.

Despite the fact that on an average tire factories and other consumers of the crude article have been operating on a fairly full production basis and the average monthly consumption up to the end of September has been some three thousand tons greater than the average of last year, New York dealers have been complaining of the small amount of purchasing by manufacturers since the January flurry. This is largely accounted for by the heavy purchase made in January. It has also come to be widely believed that, owing to experiences since the middle of 1290, manufacturers are less inclined than formerly to make purchases of rubber for far future delivery, but now prefer to take the hazard of the market from day to day. If this be true, it would be detrimental to the making of large sales at any one time but would not, in the long run, effect the quality handled.

### Restriction Not Feared

The complaints against the so-called British restrictions, which were more noisy than numerous, seem to have quieted down and, outside of an occasional report from the half million dollar Congressional joy-ride in search of new fields of rubber supplies, little is heard of the agitation so much in evidence early in the year. That this is so is not strange when it is realized that although the restrictions have been in effect for some fourteen months the price is not even now at the minimum of fifteen pence which was sought, while importations into the United States, instead of decreasing proportionately with the restriction program, have increased over last year. These two facts—the failure of prices to advance or of shipments to decrease—quieted the apprehensions of the manufacturers. The latter ceased to show any great anxiety to cover their future needs and appeared content to acquire supplies as the requirements arose.

During the first half of the year, in spite of the restrictions, importations of plantations into this country had exceeded those during the similar period of 1922 by approximately 55,000 tons. The excuse given for this in the East was the large stocks of rubber which had been shipped into Singapore, Penang and other free ports just prior to the time restrictions went into effect, but it hardly seems plausible that a sufficient amount of rubber could have been run into these ports in the short time between the announcement of the restrictions and their becoming effective to account for a steady flow of heavy shipments for so many months. In June over 31,500 tons of plantations came into this country, which was more than double the quantity imported in June, 1922. It began to appear that the restrictions were being enforced with about the same degree of effectiveness as in the case of our own Volstead act. The difficulties surrounding the enforcement of the two are doubtless quite similar, as it is probable that this artificial restraint on the ordinary course of trade inspires about the same degree of enthusiasm among the Chinese and other native producers as our prohibition laws in Scotland.

About midsummer, however, the Eastern authorities apparently awakened to the situation, and numerous reports came forward of the strenuous efforts that were being made for a more drastic enforcement of restrictions. That these efforts were successful is evidenced by the fact that in the latter half of the year importations have declined to an average of about 15,500 tons, a point well within the quantities which might be expected under a full administration of the restriction. If this rate of importation continues for a period of a further few months, it can be reasonably expected to affect prices materially.

Rumors have lately been reported both from London and the Far East that the British and Dutch Governments were again in consultation in an effort to have the latter join in the restriction program, but no official confirmation is so far obtainable. Should this be accomplished and the Dutch coöperate fully, another long stride would be made in achieving the object sought.

With all the criticism which may be made of the restriction scheme, its sponsors are still able to point out that by the end of September the London stocks were reduced nearly 20,000 tons from the corresponding date last year, while the quantities on hand and afloat to this country were 25,000 tons less than on Jan. 1, 1923. While the restriction plan has not raised the price to levels sought by the plantation owners or feared by the consumers, it (or natural causes working contemporaneously with it) has maintained a price which probably shows a fair return to the grower and works no hardship on the manufacturer or, through him, on the ultimate consumer. Thus the plantation industry may be said to have been saved from a serious predicament. The experiences through which the industry went must, necessarily, prove an eventual boom in that it developed efficiencies in cost production which will be a benefit to all concerned. It is safe to assume that the estate managers of to-day are, in general, looking not to bonanza prices but to savings in production cost to supply high dividends for their shareholders.

### Price Increase Likely

The usual number of rumors have come forth from time to time as to change in tire prices. Those of a rise are most popular at the moment. In fact, certain factories have already announced an increase. While there is certainly nothing in the present crude rubber situation to warrant a rise, the extremely high price of cotton furnishes a basis.

What the beginning of the year may have in store for the crude rubber market, it is difficult to foretell. Various deductions can be made from a study of the statistics, both of production and consumption. The great thought compelling fact is that 4,000,000 automobiles have been manufactured in this country this year and still the point of saturation appears to be as distant as it was when it was first visualized years ago. One manufacturer alone promises to produce next year 10,000 cars a day. Many others are making optimistic predictions. These facts, coupled with the increasing confidence of the public in general prosperity for next year, make it difficult to take a pessimistic view either of the volume of business to be expected or of the range of prices.

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# Will Rubber Roads Prove the Super-Road?

## Writer Sums Up Advantages of Rubber Roads and Believes Cost Can Be Within Reason

*By* Daniel Gilmartin

***Just one of the recent introductions of rubber paving in America---***

**RUBBER PAVEMENT NEAR CITY HOSPITAL**

**A rubber and fiber block pavement to create a noiseless area around the Boston City Hospital is provided by an item of $100,000 in the budget of Joseph A. Rourke of the Public Works Department. This innovation, according to present plans, will also be used to pave the Charlestown and Northern avenue bridges.**

**The new material will replace wooden paving in the vicinity of the hospital. The cost will be five to ten times that of the wood, but with quantity production it is expected the price will be reduced. The rubber blocks have a maximum of elasticity and durability.**

**Tests in several European cities have shown that it is absolutely noiseless and wears well. Its life on bridges approximates 20 years, compared with the two years for planking.**

**The plan was proposed several months ago. Since that time experiments have been conducted and study made of its use in Europe. If it proves successful, it may be used on other thoroughfares. (*From recent issue of a Boston newspaper.*)**

AMERICA on wheels—rubber wheels! Now rubber wheels on rubber! The growth of vehicular traffic has been truly astounding. The ratio between the number of automobiles to the population has jumped from ½% in 1910 to 13.70%. Today we manufacture and use more automobiles than all the rest of the world put together. But what about our roads?

We pride ourselves in being leaders among nations in the efficient handling of transportation problems. On the subject of rubber roads however, we must award pioneer honors to John Bull. For the past two years British cities have been laying down various forms of rubber roadways. Around the famous Cenotaph in Historic Whitehall—and how appropriate too—the London City council has laid a rubber block paving. The silence can almost be felt. But rubber roads are not laid for sentiment only, The Old Kent Road, Holborn, Euston Station approach, and other of the cities famous thoroughfares have provided real actual tests that have proved valid the claims made for this latest departure in road building. Not only London, but Edinburgh, Glasgow, Manchester, Hull, and Birmingham have all rubber roads now in use. And New York? Will this city secure pioneer honors in the country by installing the first rubber roadway in this country?

This good roads problem is of immediate interest to everyone. It is a gigantic national industry, and the most pressing feature of the Good Roads problem, is the question of maintenance. 42,000 miles of new surfaced roads were built in 1923—How many of these will have to be rebuilt or resurfaced in a few short years? At the beginning of 1923 there were about 400,000 miles of approved surfaced roads in existence in the United States. Thomas H. MacDonald, Chief of the Bureau of Public Roads, at Washington, estimates that this mileage will be doubled in the next decade. The cost of these new roads is tremendous, but the costs of repairing old roads is positively staggering. Will we be Penny wise or will we take advantage of pioneer work in England and build the road of ultimate economy? What part will rubber blocks play in future road building?

The question is especially interesting because the phenominal growth of motor traffic has brought about a revolution in street and highway construction and the problems presented have been most embarrassing and perplexing to highway engineers and road commissions. In the rubber road, a rubber block is to be used to replace the present road materials, such as wooden blocks, asphalt, concrete, macadam, etc. This rubber block is an amalgam of rubber claimed to be more durable and more practically useful than the pure unalloyed product would be, and it can be readily seen that this is a material that offers very obvious advantages. If all that is claimed for rubber block road paving is true, the ultimate gain is no less in regards to costs than it is as regards to durability, safety, cleanliness, noiselessness, and absorption of shock.

### Old English Rubber Roads

Rubber roadways, as we have said, have been tried in the past, though not in the form that is about to be introduced in this country. There is at St. Paneras, in London, a stretch of roadway paved with rubber sheeting that was laid 38 years ago, and which, despite constant usage, is perfectly good today. In Princess street, Edinburgh, a rubber pavement has been in use for over twenty years, and although it must have been walked over by many millions of people, it has lost only a fraction of an inch in all that time. So it will be seen that rubber roads are indeed very durable, and due to this durability rubber blocks may well prove to be the road of ultimate economy.

### Rubber Amalgam and Concrete

The new roadway takes the form of a rubber amalgam surface secured to a concrete base. The block is simplicity itself, and the design is very flexible, permitting changes to meet the varying requirements met with in road construction. The surface is secured to the base by natural means, no spikes, screws, bolts or other mechanical means are used or necessary. This makes for a firm surface. A somewhat similar road has been in use in London for over a year and is giving very satisfactory service. While there is no experiment recorded of sufficient time to enable one to say how long such a surface will remain good, the experience at St. Paneras, already referred to, argues well. The brick is laid in plastic concrete and allowed to set before traffic is permitted on the road. This makes for a certain firmness for the entire road.

The above short description shows that the rubber road possesses all the advantages of the concrete road and offers in addition distinct advantages in the rubber surface. We have a solid road base protected by rubber. The rubber absorbs the shock and vibrations of modern heavy traffic and so prolongs the life of the road base. This is no theory, but the simple facts. It is no trick, but is due to the peculiar natural

properties of rubber. In comparing the advantages of various roadways, we must keep in mind certain considerations. The initial cost, the cost of replacement and repairs, figured in time as well as materials, the life of the road surface, the safety of the surface, and the miscellaneous facts inherent in each type of road, are the major facts to discuss in any comparison of roads.

### How Rubber Roads Score

The initial cost of laying rubber roads is not as yet finally determined. At present the cost is somewhere between the cost of laying creosoted blocks of wood and granite blocks. As will be readily appreciated, the question of costs depends greatly upon quantity production and as yet no opportunity has been given to test the costs of rubber blocks under quantity production. As the surface is an amalgam of rubber in which scrap is used, and as the base is of concrete, it is readily appreciated that no expensive material is used. The sponsers for this type of road believe that once quantity production can be obtained the costs will compare very favorably with present road materials.

When we consider the cost of replacement and repairs, no real problem confronts us. The blocks of small size can readily be replaced and by simply laying a new strata of plastic concrete when the new blocks are relaid. The ease with which this may be done is a distinct advantage as especially in city streets the roads are continually being replaced.

As we have already covered the life of the surface, and as we have also shown how rubber surfaces protects the underlying road beds and so prolongs the life of the road bed, we can pass over those features and study the miscellaneous advantages offered by the rubber road. In taking up this phase, we may well start with the traffic that runs over the surface. In the good old days, the main problem offered was to secure a good footing for old Dobbin and a good grip for the tire on his shay. Anything that served to protect against the mud was satisfactory. As the roads were used more as highways, a better and stronger road was demanded and stone was laid. This made for a noisy road and a hard road, and to help out, rubber tires were put upon the wagons. The introduction of motor cars necessitated solid rubber or pneumatic tires. This partly eliminated the noise and did away with the necessity for a foot grip for the horses. The surface was then made smooth with bricks, and later macadam, asphalt and concrete. These surfaces were hard and smooth, in some cases altogether too smooth, for the motor cars skid frightfully upon some of these surfaces. All of the above are hard, and so transfer every shock and pound direct to the road base under them. And here rubber scores heavily for it is without doubt the smoothest and most noiseless of surfaces. In addition it is safe, for there is a noticeable affinity between the rubber tire and the rubber road surface, and furthermore, the surface permits of markings to present an absolutely non-skid surface.

### Atmospheric Conditions

In our changeable climate it is essential that road surfaces should be unaffected by climatic changes, or the vicissitudes of the weather. The surface must withstand heat and cold alike. How does rubber stand the climatic and weather changes? Unlike wood, it does not absorb moisture. Where the wooden block expands and contracts due to moisture and so presents an uneven and hilly surface, rubber is unaffected as it is by nature waterproof. Unlike asphalt or macadam, rubber is not affected by heat or cold. Where heat softens asphalt and makes going difficult, rubber remains constant. Nor does rubber roll into ridges or hills as does wood and asphalt, and so ruts and hollows which make mud holes, are avoided. The surface of rubber is constantly even and smooth. This means a clean road surface. Whereas the above roads, like concrete, absorb dirt and are naturally unsanitary, rubber does not absorb foreign matter and is therefore hygenic. Rubber, unlike concrete, will not crack under strains or due to expansion or contraction caused by heat or cold; there will therefore, be no holes or openings in the rubber road to make the surface uneven or to collect dust or mud. Here then, rubber roads score once more for they present a constant surface, smooth, clean, sanitary and free from ruts, mud holes, or dust traps.

**Rubber, due to its peculiar natural properties, offers considerable advantages over other surfaces for roadways. Rubber presents a resilient, silent, clean, safe, and sanitary surface that will withstand severe wear and climatic changes. By consenses of opinion it will be proved to be the *road of ultimate economy*, as it is the only material that will absorb and distribute the shock of traffic. If *ultimately, why not now?***

### Noiselessness and Cushioning Properties

The absence of noise is a boon, not only to the users of roads but to the inhabitants residing alongside the roads. This is especially true in case of hospitals, churches, and homes, but is also desirable from the point of view of the merchants and store keepers. The absence of noise is due to the same origin as is the absorption of shock. Rubber is distinctly a cushioning material. It is the only material that will soften the shock and so eliminate vibrations as it eliminates noise. This is of utmost importance. Where road beds under eighteen inches of concrete have been found broken, the foundations of buildings have also been severely affected by the constant vibrations of passing traffic. Again rubber roads score, for they are silent, they absorb the shock and so protect foundations of buildings adjoining the roads. The rubber block provides an easier riding surface and this increases the life of the vehicles and assures that the goods carried over rubber roads will arrive at their destinations in better condition due to the lack of shocks and poundings.

Rubber roads will require no sand to give them a grip. This will be a considerable saving and a joy to motorists and cyclists. Rubber will require no tarring or oil covering, and this will be a joy indeed to all road users. All materials deposited on rubber may easily and quickly be removed. Rain or a fire hose will effectively clean the rubber surface and remove sand, oil, grease, etc. for the simple reason that rubber is non-absorbent. Rubber affords an excellent grip for the motor tire or the horse and so makes pulling easy and renders the motor more efficient. For the same reason motor brakes become more effective and take hold more quickly and more surely. This important feature makes the road safer for both the vehicle driver and the pedestrian, and would doubtless contribute greatly to reduce the number of accidents. Even in wet weather, the road presents a safe surface, for the reason that water does not adhere to rubber but glides over it, and a slight pressure brings the rubber tire in direct contact with the rubber road surface.

### Summary of Advantages of the Rubber Road

In every test that we have applied, rubber roads score and stand out as the most desirable from every point of view.

*First*—Rubber roads are without doubt the *smoothest* and most *silent* of surfaces and will remain so longer than any other material.

*Second*—Being unaffected by climate, heat or cold, they are at all times *uniform, dependable and constant* in their service. No hills, ridges, holes or cracks.

*Third*—What experience we have at hand, tends to prove rubber as *durable beyond ordinary requirements*, and the longevity of rubber roads is not matched by any present surface, except granite.

*Fourth*—Rubber presents the most *noiseless* surface yet known.

*Fifth*—No sanding, gritting, scarring, or oiling of the surface is required and this adds materially to the *economy of upkeep*, and the joy of users.

*Sixth*—Rubber being non-absorbent, it may be *easily cleaned*, and is at all times *sanitary* in itself, can harbor no disease.

*Seventh*—Rubber presents a sure grip to tires and horses, and so is *efficient*.

*Eighth*—Rubber offers a *safe* roadway. Brakes take hold surely and quickly.

*(Continued on next page)*

# Rubber Likely to Command World Attention in 1924 - *Says Financial Writer*

## Scores Results of Restriction and States that British Do Not Believe in Soundness of Stevenson Plan

*By* **Richard Spillane**

**Financial Editor, *N. Y. American***

IT looks as if rubber is going to command world attention this year as it did in 1922. The Stevenson plan, by which the British proposed to regulate production and price, has had more than one year's trial. It has not worked. Publicly, the British express belief in its soundness. Privately they are not so sure.

But it is not what the British say or think. Facts are what count. The British regulatory system doesn't regulate. It is against human nature and sound economics. In essence, it is like the Brazilian scheme for the valorization of coffee, which has had three trials and scored three failures.

There are few products of the earth that have varied so widely in price as rubber. It has sold around $3.10 a pound and as low in New York as 11 cents a pound. Tremendous profits have been made by rubber growers, and there have been tremendous losses. Naturally, the tremendous profits led to a great extension of the cultivation of rubber.

The British control through domicile or corporate ownership four-fifths of the rubber of the world. They claim they own only 35 per cent directly. About 70 per cent of the rubber produced comes from Malaya and Ceylon. Many of the plantations of Java and Sumatra are controlled by British capital.

Rubber production has increased enormously in the Indian Ocean section. Nowhere else in the world are conditions so favorable in relation to soil, cheap labor and rainfall. Great plantations have been developed under company management but along with these there has been a great amount of rubber grown by small, independent planters, Chinese and natives. Regulation of these people has been and is practically impossible, particularly the Chinese, who, despite the most drastic measures to control sale of rubber, manage to smuggle it to points where it can be marketed.

### Surplus in 1922

In 1922 there was a surplus of rubber equal to one year's supply. Rubber companies which previously had paid huge dividends and had not accumulated cash reserves were on the verge of bankruptcy. It was then that the British launched the so-called Stevenson plan to restrict the marketing of rubber.

Briefly the plan set a price at which a certain percentage of the crop might be sold. If a certain average price was maintained for the quarter the exportable percentage was increased, but should a planter export more than this percentage he was required to pay higher rates of duty.

This looked all right to the British but not to the Dutch. They said they would have nothing to do with it. Then the British determined to go it alone. They put it up to the legislatures of the Straits Settlements, Malaya and Ceylon and it was adopted, effective November 1, 1922. As a matter of fact they put the standard of production so high that a large part of the benefit of restriction was lost. If rubber sold below 1 shilling 3 pence a pound the output was to be limited to 60 per cent of standard production.

The average sales price of 1 shilling 3 pence (30 cents a pound) was maintained for the first quarter. In the second quarter it exceeded 1 shilling 3 pence. The sentimental effect was to shoot the price up to 1 shilling 6 pence in February, 1923, which resulted in a release of an additional 5 per cent of the quota of supply. There was a heavy demand from America for six months owing to the tremendous production of automobiles but suddenly this dropped and for the third quarter rubber sold under 1 shilling 3 pence and the output went back to 60 per cent.

### British Score Dutch

British newspapers were caustic in their remarks about the Dutch. In effect, they charged that the Dutch profited by the plan without supporting it. At any rate, where there are a great number of independent planters, and not a few of them are Chinese who are the most accomplished smugglers in the world, ways and means of evading regulations are not generally difficult, especially when the regulations are unpopular.

Rubber today sells at 26 cents. Its highest under Britain's regulatory efforts was 36 cents.

There must be some method devised to bring stability into the business. Those who are best informed and wholly unprejudiced see correction possible only through friendly co-operation between producers and consumers, the British producer and the American consumer. This co-operation should be more toward finding larger employment for rubber than toward restricting its growth or marketing. There are tremendous opportunities in this line. The point of saturation in the automobile industry in America must come some day. That industry is the big consumer of rubber today. But the possible uses of automobiles in other sections of the earth are practically illimitable. Civilization marches along with transportation. The automoble is the most serviceable vehicle thus far devised by man.

Sentimentally, if not otherwise, America has a deep interest in rubber for it was an American—Goodyear—who made it of world's use by vulcanization.

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## Rubber Highways

*(Continued from previous page)*

*Ninth*—Rubber by its nature provides a *cushion* and so absorbs the poundings and shocks, thus protracting the life of the road bed and eliminating the vibrations on the foundations of adjoining buildings. This adds materially to the ultimate economy of the road, and the vehicles.

*Tenth*—The rubber block gives *a firm surface and road.* The surface is securely attached to the base which in turn becomes part of the road bed itself, so we eliminate creeping.

*Eleventh*—Colored bricks may be laid to direct pedestrian travel and they present a beautiful road. They expedite traffic.

*Twelfth*—Rubber may be compounded to meet any requirements. Then we have the most *flexible* method of road construction.

*Thirteenth*—The rubber brick is readily torn up and the repairs made easily. The brick is simple to lay.

*Fourteenth*—The initial cost while slightly higher, compares favorably with other less desirable surfaces.

*Fifteenth*—Rubber presenting a surface that is safe, durable, long lived, efficient and cushioning deserves to be called "the road of ultimate economy."

# Effect of Plantation Treatment on Quality of Rubber

## Vacuum Treatment of Latex Preferable to Coagulation With Acetic Acid — Age of Trees Affect Quality

PLANTATION rubber is the manufacturer's raw material. Its quality is impressed upon it when it leaves the grower's hands, and whatever defects it then possesses can rarely be made good by subsequent manipulation in a distant factory.

With the idea of accumulating data which would admit of the formulation of a better method of treating the latex and handling the crude rubber so as to assure the production, as far as possible, of the best quality, the Imperial Institute began in 1916 a series of investigations on production methods, with especial reference to the influence of these methods on the time of cure and the physical properties of tensile strength, elongation and permanent set. Reports on various phases of the investigation have been published from time to time and the entire series, covering exhaustive tests on more than 500 samples of latex and crude rubber, have now been summed up in a final report.* The experiments were made mostly with Ceylon rubber.

### Maturing the Coagulum and Blocking the Rubber

The time required for curing a sample of rubber is decidedly influenced by the time allowed the coagulated rubber to mature before creping; the longer the coagulum is allowed to mature (up to 11 days), the shorter the time of vulcanization. The time of maturation required to reach the minimum time of cure can be shortened to five days if creosote is added to suppress fermentation, but after five days contact with the preservative the time of cure is again increased. When the crepe thus obtained, using creosote, was allowed to rest a day or two and then blocked while wet, the resulting rubber showed a shorter time of vulcanization, the higher the tensile strength and the better the other mechanical characteristics.

The age of the trees from which the latex has been obtained is of some importance. Rubber from ten-year old trees vulcanizes in 14 per cent less time than 16 to 20 year old trees of the same estate. Rubber prepared between April and July appears to vulcanize more slowly than that prepared during the remainder of the year.

### Processes which Depreciate the Product

Spontaneously coagulated rubber, whether worked into sheet or crepe, was found to vulcanize in 23 to 25 per cent less time than the corresponding product coagulated with acetic acid. Addition of ammonia formaldehyde and sodium sulphite sufficient to delay coagulation for 24 hours was found to increase the time of vulcanization. The time of vulcanizing for machine sheet is 40 per cent greater than for hand pressed sheet. Thick crepe requires 15 per cent more time than machine sheet; thin crepe 12 per cent more time than thick crepe. The more slowly vulcanizing rubbers are not so strong as those which vulcanize quickly. Sheets and crepe dried in smoke always vulcanize more slowly and are weaker than corresponding products dried in air.

### The Best Possible Plantation Rubber

From the report it is plain that the best grade of plantation rubber is that which is obtained from trees about 10 years old during that part of the year between August and March; the rubber allowed to coagulate spontaneously (without the use of acid); the coagulum allowed to mature about 10 days before creping; allowing the crepe to further mature a day or two before blocking, and blocking while wet. Inferentially, the custom of hastening coagulation by the use of acetic acid and of smoking the product, now exclusively practiced throughout the Far Eastern rubber districts should be abandoned. The points brought out by this investigation suggest the lines along which reform of the current methods of production may take place. That the entire system is likely to be not merely reformed but revolutionized in the near future is indicated by the recent finding that rubber prepared by evaporating the latex in a vacuum dryer is even better than that prepared by any of the other methods.

### Heavily Smoked Sheet is the Best for Making Ebonite

The methods above described for making rubber that shall have the shortest time of vulcanization and the most desirable physical and mechanical properties, do not, however, give the best material for making ebonite, as was shown by an investigation carried out by the Imperial Institute at the request of the British Admiralty. The materials operated upon in this investigation and the characteristics were as follows:

| | Time of vulcanization. *Mins.* | Tensile strength. *lb. per sq. in.* | Elongation. *Per cent* | Permanent set. *Per cent* |
|---|---|---|---|---|
| (1) Wet creosoted roll | 51 | 2,390 | 877 | 2.8 |
| (2) Wet slab | 50 | 2,530 | 897 | 2.7 |
| (3) Heavily smoked sheet | 90 | 2,340 | 892 | 2.6 |
| (4) Plain sheet (control) | 68 | 2,470 | 886 | 2.9 |

These results are in general agreement with those usually obtained with similar classes of rubber, the time of vulcanization of the wet rubbers being the shorter and the physical properties among the most desirable. The above materials were made into ebonite by the North British Rubber Company and the tests of dialectric strength made at the National Physical Laboratory. The sheets were 9/16″ thick and gave the following results:

| | Dielectric strength, volts per mm. |
|---|---|
| (1) Wet creosoted roll | Withstood 125,000 volts for 20 seconds. |
| (2) Wet slab | Withstood 125,000 volts for 1 minute. |
| (3) Heavily smoked sheet | Withstood 125,000 volts for 2 minutes. Breakdown voltage, 161,000. |
| (4) Plain sheet (control) | Withstood 125,000 volts for 15 seconds. |

All sampled passed the Admiralty specification, but it will be observed that the smoked sheet is distinctly the best. The wet creosoted roll and the heavily smoked rubber did not differ appreciably in chemical composition, so it appears that the heavy smoking may lead to a physical rather than a chemical difference in the rubber on which the superiority of the ebonite may depend.

The foregoing methods, while pointing a way to an improved product, are still not the last word on the subject. Evaporating the latex under vacuum gives a finer rubber than any other method, but the general employment of vacuum evaporation on the rubber plantations is doubtless a matter of the distant future.

*Bulletin of the Imperial Institute, Vol. XXI, No. 2.

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## LS Rubber—A New Crude Rubber

The apparatus for making sprayed latex rubber and method of operation are described in an article which appears in *Industrial and Engineering Chemistry*, December, 1923. The merits of sprayed rubber as brought out during a period of three years' testing are given and tables are shown which give analytical data and physical tests of sprayed rubber in comparison with fine para, pale crepe and smoked sheet. Sprayed rubber is uniform in quality, ages well in cured stocks, gives high tensile strength, cures quickly and is of broad application in the manufacturing of rubber goods.

# TECHNICAL ABSTRACTS

**Mechanical** **Chemical** **Physical**

## Products From Dry Distillation of Rubber Scrap

In the Dutch journal, *Chem. Weekblad*, volume 20, page 78 (1923), there is contained an interesting description of the products that are obtained by the dry distillation of rubber scrap and their technical value.

Two samples of distillation products were examined, one which was known to be distilled between the temperatures of 200 and 300 degrees C, and the other between the temperatures of 300 and 400 degrees C. It was found that these samples did not appear to possess any commercial value. They represented about fifty per cent of the total distillate that was obtained above a temperature of 200 degrees C. The distillate is very volatile and can be easily mixed with the ordinary organic solvents, oils, etc. The distillate possesses the property of dissolving rubber, resins, etc. This product can possibly be used in the manufacture of paints and varnishes, as a substitute for turpentine, but it does not appear to have any use as a solvent for rubber due to the fact that it has a low boiling point and a rather disagreeable odor.

## Preserving the Elasticity of Rubber

An article, which appeared in *Zeitsc Rift Fuer Angewandte Chemie*, volume 34 page 465, describes methods that may be employed for preserving the elasticity of rubber. This consists in artificial stimulation of the colloidal activity of the same by the aid of alkalies or other substances which are able to produce colloidal dispersions with the rubber. The following conclusions have been reached from the data that was obtained in the experimentation.

In the first place it was established that alkaline compounds possessed the power of dispersing colloidal rubber. The volatile alkaline compounds produce dispersions which take on the appearance of a state of agregation, when the alkaline substance is removed by careful, slow evaporation. The less the volatility of the alkaline substance, the greater the effect of the same on the colloidal rubber and more durable the influence of the same. In the successive transformations from the state of dispersion to the state of aggregation, the elasticity and the original properties of the rubber are generally maintained as they were in the first place.

## Accelerator Practice in Rubber Industry

There seems to be a good deal of misunderstanding in the British rubber industry to-day as to the position of rubber accelerators in general rubber practice, and doubt exists as to whether accelerators have come to stay as a valuable and developing feature of rubber practice. The facts regarding the bulk manufacture and use of rubber accelerators in all countries at the present time, and the enormous tonnage of rubber mix committed to the care of accelerators, permits no reasoned doubt on this point. The question, rather, is the choice of the correct accelerator for a particular job, and the working out of the proper conditions of use of the accelerator in that job.

The simple facts that the world's consumption of organic accelerators is certainly more than three thousand tons per annum, and that a number of reputable lines of all kinds, from tires to hard rubber have been based on accelerated cures for a number of years, mean that the industry which is backward in accelerator practice is ignoring one of the chief factors in successful competitive production. Accelerator practice has suffered in all countries, and particularly in England, from the sale and use of unstandardized and disguised specialties, which admit no intelligent control and certain standard output.

Although the evidence is scattered, it is possible to grade accelerators to-day according to their relative speed in typical mixes. This the lecturer has attempted, following which he goes on to discuss the influence of accelerators on other features of rubber manufacture, such as milling, storage, and aging. His conclusion is that on all these points the use of the proper accelerator, wisely employed, introduces no harmful influence. But on the other hand, in particular with regard to aging, the accelerator can be used with very great advantage in such a way as to make the mix and the cure more consistent with a finished product showing valuable aging properties.

The lecturer claims that the English have been backward as a whole in the matter of the development of organic accelerators. Just as they failed to hold the great advantages which were theirs in the middle of the nineteenth century with regard to the dye industry and allowed Germany to reap the huge benefit of the inventions of Perkin and his co-workers, so they have allowed other countries in particular America, to forge ahead in a field in which, through the inventions of Peachey and others, they once held a dominating position.

Abstract of paper read before The Institution of the Rubber Industry, London, England, on Dec. 3, 1923 by Major V. Lefebure.

## Synthetic Rubber Like Substances

Aromatic hydrocarbons are treated with sulphur chloride or selenium chloride in the presence of metals, such as finely divided iron or zinc, or of metallic chlorides such as ferric chloride, aluminum chloride, or the like. In the ordinary way this reaction yields relatively simple chemical substances, such as thiathrene which is obtained by the action of sulphur chloride in a dilutent on benzene in the presence of chloride of alumina. By using increased amounts of the non-metallic chlorides, and increasing the time and temperature of the reaction, resinous substances of various degrees of hardness and insolubility may be obtained.

For example, benzene and sulphur chloride heated gently in the presence of iron powder or ferric chloride yield rubber-like substances slightly soluble to insoluble in the usual organic solvents, according to the proportion of sulphur chloride that is employed for this purpose. With aluminum chloride there are produced at the boiling point of benzene, according to the amount of the non-metallic chloride employed, semi-solid to solid soluble resins, solid resins soluble only in carbon disulphide, and finally resins insoluble in all organic solvents. The condensing agent used influences the product more than the other variants .

This process is patented in German Patent No. 372,664.

## Recovery of Waste Vulcanized Rubber

French Patent No. 539,744 is concerned with a process and apparatus for recovering waste vulcanized rubber in which the main desire is to avoid the excessive use of labor and to simplify the process by carrying out the operations in a single machine which is formed of a drum, provided with rotating agitators. The waste rubber, which is first coarsely comminuted, is introduced in the dry state in an automatic cutting machine where the rubber is cut up into fine bits by rapidly rotating knives. A current of air blows the particles through a screen and carries them a greater or less distance in accordance with their weight. This process, according to the patent, enables the separation of the different materials that are found in the waste rubber, such as mineral fillers, textile matters and of course rubber itself.

## New Experiments on Constitution of Rubber

A series of experiments which were made for the purpose of ascertaining more definite information regarding the constitution of rubber. The report of these experiments is published in the *Oesterreicher Chemiker Zeitung,* volume 25, pages 143 to 147, 150 to 153.

Para rubber, which had first been thoroughly purified by solution in benzene and then by precipitation with the aid of alcohol, was found to have the following percentage composition:

Carbon equal to 88.2 to 87.2 per cent,
Hydrogen equal to 12.8 to 11.8 per cent.

This makes the carbon : hydrogen ratio 10 : 16 in one case and 10 : 17 in the other.

The saponification of the ozonides gives the compounds, levulinic aldehyde and levulinic acid. Hence the original hydrocarbon, from which these compounds are derived, must contain the chain radical

$$HC - CH_2 - CH_2 - C - CH_3$$

which is similar to that found in 1,5 dimethylcyclo-octadiene (1,5).

In the case of the hydrocarbon

$$C_{10}H_{16}$$

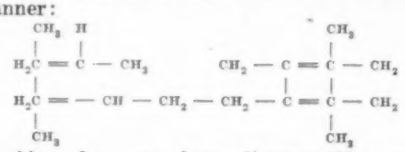
of the closed chain series, the formula will have to be written as follows:

$$\begin{array}{l} H - C - CH_2 - CH_2 - C - CH_3 \\ CH_3 - C - CH_2 - CH_2 - C - H \end{array}$$

On the other hand the formula for the hydrocarbon

$$C_{10}H_{17},$$

which is of the open chain type must be written in the following manner:



Congo rubber does not form dioxyozonides as easily as para rubber. Then again the proportion of the products of decomposition of these ozonides differ rather considerably.

The analysis of the hydrocarbon and that of its ozonides lead to the formula

$$(C_{10}H_{16})_x$$

of the closed ring type. The same conclusion holds good of the synthetic rubber which is made from isoprene. The action of sulphuric acid varies in accordance with the type of rubber that is being treated with the acid.

When rubber is heated in solution with xylene to a temperature of more than 140 degrees C, it can no longer be precipitated in its original condition. It has been depolymerized and its viscosity decreases.

It is therefore possible to conclude that a molecule exists in the "spiral" cyclic or straight chain form. The formula that is written for the rubber contains double bonds which are only partially saturated or which are broken down while the rubber depolymerizes. In this way the rubber loses its complexity of molecular constitution and consequently its viscosity.

## Rubber Prepared by the Hopkinson Spraying Process

In the Bulletin of the Rubber Growers' Association, 1923, volume 5, pages 445 to 450, the properties of rubber prepared by the Hopkinson spraying process are investigated. It was found that rubber made by this process swells when immersed in a solvent such as benzene, but this rubber dissolves less readily than smoked rubber sheet. It requires more mechanical treatment than the average grade of smoked or crepe rubber to render it plastic. Even after this treatment it is necessary to exert greater pressure on the rubber in order to form it into shape than is ordinarily required with other types of rubber. Furthermore it has been found that during the mixing operations the powders possesses a marked tendency to cake.

As far as the vulcanizing properties of the Hopkinson process rubber is concerned, it was observed that variation in the rate of vulcanization of different parts of the rubber in the same block was small and of the same order as that found in a block of common smoked sheet. The time of vulcanization of a rubber batch, containing 90 per cent of rubber and ten per cent of sulphur, was 105 minutes to obtain a product in which the elongation is 850 per cent at a load of 1.3 kilograms per square millimeter. The corresponding time for ordinary rubber is 175 min.

With the former rubber, however, the product was "short" and brittle. For the attainment of the maximum tensile strength, indeed, 80 to 85 min. was a sufficient length of time for vulcanization. The additional serum substances in the rubber from sprayed latex cause an increase in the extensibility of the vulcanized product. Short aging tests of the vulcanized samples, which were carried out at a temperature of 70 degrees C, lasting, for example, from two to six hours, form a useful indication of the condition of vulcanization of the rubber samples. Each hour produces an effect equivalent to vulcanization for an additional period of two and a half minutes, and sample below the tensile optimum show an improvement in strength, whereas deterioration is observed when the sample of rubber has been over-vulcanized.

## Vulcanization of Rubber

A series of investigations were made by certain Russian rubber chemists and reported in the Journal of the Russian Physical Chemical Society, volume 53, pages 65 to 78 and also the Journal of the Society of Chemicial Industry, 1923, pages 842-3. According to these reports the vulcanization of rubber by means of solutions of sulphur was investigated. The solubility of rubber in benzene or xylene is too small to allow of the use of these solvents. The solvent that was used in these investigations was a mixture containing 75 per cent of benzene and 25 per cent of carbon disulphide. The raw rubber was immersed in solutions of sulphur in this solvent for a period of two hours. Various concentrations of rubber solutions were employed for this purpose. The quantity of sulphur absorbed by the rubber was found to depend on the concentration, which means that an absorbtion had taken place.

A similar process was found to take place with solutions of sulphur in sulphur chloride, the latter seeming to act as a carrier of sulphur. The addition of a crystal of iodine in the above reaction greatly increases the amount of the absorption, the reaction being then however no longer entirely of an adsorptive character.

When rubber was heated to a temperature of 129 degrees C for a varying period of time, in sealed tubes with solutions of sulphur in acetone, the amount of sulphur insoluble in boiling acetone was found to increase with the time of heating up to a certain point, and then rapidly to decrease, and this decrease occurred chiefly in that part of the insoluble sulphur which was combined chemically with the rubber. A similar decrease was observed to occur with previously vulcanized rubber on heating for prolonged periods with acetone, and it appears from these observations that the process of vulcanization may be to a certain extent reversible. When mechanical mixtures of raw rubber and sulphur were heated in sealed tubes together with alcohol, aquious ammonia, water or acetone, the vulcanization coefficient that is the ratio of soluble to insoluble sulphur was 0.30, 0.42, 0.039 and 0.40 respectively.

## Rubber Products from Rubber Latex

Rubber latex is applied to unwoven parallel cords. The cords are then dried and thereby unite together to form a sheet. By this process the rubber comes in more intimate contact with the fibers, than is the case when using the ordinary solutions of rubber in organic solvents. Then again the loss of expensive solvent is avoided. The process also permits the use of a cheaper grade of cotton cloth, when this material is employed in the manufacture of cord tires. The products exhibit exceptional resistance to separation of the rubber from the cord, thus providing a longer life for the tires, belting and other articles that are manufactured from them. For further details see British Patent No. 178,811.

# RUBBER STATISTICS

**Import** **Production** **Export**

## Importations of Crude Rubber into the United States During December, 1923

Figures compiled and distributed by The Rubber Association of America, Inc.

(Estimated net weights—long tons.)

PLANTATIONS

| *FROM* | *TONS* |
|---|---|
| Batavia | 1,018 |
| Belawan-Deli | 2,448 |
| Colombo | 1,629 |
| Hamburg | 120 |
| Liverpool | 200 |
| London | 2,906 |
| Malacca | 1,217 |
| Penang | 2,565 |
| Pt. Swettenham | 858 |
| Rotterdam | 630 |
| Singapore | 11,855 |
| Sourabaya | 558 |
| | 26,004 |

AFRICANS

| *FROM* | *TONS* |
|---|---|
| Antwerp | 11 |
| Bordeaux | 172 |
| Hamburg | 94 |
| Liverpool | 5 |
| | 282 |

CENTRALS AND GUAYULE

| | |
|---|---|
| Centrals (Mexico and Central America) | 65 |
| Guayule (Mexico) | 93 |
| | 158 |

PARAS

| | |
|---|---|
| Bahia | 5 |
| Iquitos | 20 |
| Manoas | 769 |
| Para | 633 |
| | 1,427 |

GUMS, WASTE RUBBER, ETC., IMPORTED FROM VARIOUS SOURCES

| | | | |
|---|---|---|---|
| Waste | 183 | Miscellaneous Gums | 484 |
| Balata | 100 | | |

### Comparison 1922—1923

| | DEC.-1922 | DEC.-1923 | Total Importations 12 months ending, DEC. 31. 1922 | 1923 |
|---|---|---|---|---|
| Plantations | 35,550 | 26,004 | 276,649 | 282,491 |
| Paras | 1,885 | 1,427 | 11,092 | 11,925 |
| Africans | 597 | 282 | 2,691 | 3,503 |
| Central | 80 | 65 | 135 | 643 |
| Guayule | — | 93 | 281 | 1,224 |
| Manicoba and Matto Grosso | — | — | 122 | 72½ |
| | 38,112 | 27,871 | 290,970 | 299,858½ |

ARRIVALS PLANTATIONS FOR DECEMBER, 1923, SHOWING PORTS OF ORIGIN AND ARRIVAL

| *FROM* | *ARRIVED AT* | *TONS* |
|---|---|---|
| Batavia | Boston | 9 |
| Batavia | New York | 1,009 |
| Belawan-Deli | Boston | 79 |
| Belawan-Deli | New York | 2,369 |
| Colombo | Boston | 7 |
| Colombo | New York | 1,622 |
| Hamburg | New York | 120 |
| Liverpool | New York | 200 |
| London | Boston | 85 |
| London | New York | 2,821 |
| Malacca | Boston | 6 |
| Malacca | New York | 1,211 |
| Penang | Boston | 39 |
| Penang | New York | 2,526 |
| Port Swettenham | Boston | 16 |
| Port Swettenham | New York | 842 |
| Rotterdam | Boston | 8 |
| Rotterdam | New York | 622 |
| Singapore | Boston | 484 |
| Singapore | Los Angeles | 360 |
| Singapore | New York | 10,755 |
| Singapore | Philadelphia | 180 |
| Singapore | San Francisco | 76 |
| Sourabaya | New York | 558 |
| | Total | 26,004 |

ARRIVALS OF PLANTATIONS BY PORTS

| | | |
|---|---|---|
| Atlantic Ports | | |
| Boston | 733 | |
| New York | 24,655 | |
| Philadelphia | 180 | |
| | | 25,568 |
| Pacific Ports | | |
| Los Angeles | 360 | |
| San Francisco | 76 | |
| | | 436 |
| Total | | 26,004 |

## British Rubber Imports

*(Movement of all kinds of Rubber to the United Kingdom as per BOARD OF TRADE RETURNS)*

| FROM | NOVEMBER 1923. | NOVEMBER 1922. | Eleven Months ended NOVEMBER 1923. | 1922. |
|---|---|---|---|---|
| Straits Settlements & F. M. S. | 5,805 | 3,756 | 48,336 | 35,233 |
| Ceylon and British India | 1,165 | 1,633 | 12,669 | 11,873 |
| Dutch East Indies, etc. | 847 | 216 | 6,863 | 6,383 |
| Brazil and Peru | 307 | 285 | 3,156 | 3,413 |
| Other Countries | 115 | 21 | 1,539 | 528 |
| *Total Tons* | 8,239 | 5,911 | 72,563 | 57,430 |

## Report of Inventory—Production—Domestic Shipments of Pneumatic Casings—Inner Tubes—Solid Tires

January, 1922 to November, 1923

"Production" and Shipment" figures cover the entire month for which each report is made. "Inventory" is reported as of the last day of each month.

"Inventory" includes tires and tubes constitnting domestic stock in factory and in transit to, or at, warehouses, branches (if any), or in possession of dealers on consignment basis, and as a total represents all tires and tubes still owned by manufacturers as a domestic stock.

"Shipments" includes only stock forwarded to a *purchaser* and does not include stock forwarded to a warehouse, branch, or on a consignment basis, or abroad.

(Compiled by The Rubber Association of America, Inc.)

| | PNEUMATIC CASINGS | | | | INNER TUBES | | | | SOLID TIRES | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MONTH | No. Mfrs. Reporting | Inventory | Production | Shipments | No. Mfrs. Reporting | Inventory | Production | Shipments | No. Mfrs. Reporting | Inventory | Production | Shipments |
| January, 1922 | 66 | 4,174,216 | 2,055,134 | 1,596,806 | 66 | 5,246,647 | 2,343,393 | 1,889,724 | 11 | 181,769 | 40,224 | 33,294 |
| February, 1922 | 66 | 4,691,329 | 2,084,308 | 1,562,365 | 65 | 6,141,956 | 2,596,774 | 1,702,583 | 11 | 183,448 | 39,492 | 36,805 |
| March, 1922 | 63 | 5,183,286 | 2,645,790 | 2,073,963 | 63 | 6,991,118 | 3,017,511 | 2,090,737 | 11 | 182,197 | 49,433 | 48,350 |
| April, 1922 | 65 | 5,464,336 | 2,401,187 | 2,086,651 | 65 | 7,230,096 | 2,650,573 | 2,329,343 | 11 | 173,748 | 46,664 | 52,309 |
| May, 1922 | 65 | 5,523,093 | 2,721,503 | 2,639,273 | 65 | 7,189,552 | 2,970,696 | 2,938,947 | 11 | 170,904 | 57,640 | 60,711 |
| June, 1922 | 64 | 5,042,147 | 2,838,890 | 3,133,260 | 64 | 6,186,534 | 3,130,629 | 3,973,679 | 11 | 169,808 | 66,089 | 63,408 |
| July, 1922 | 63 | 4,834,106 | 2,476,636 | 2,695,095 | 63 | 5,675,839 | 3,068,199 | 3,630,744 | 11 | 176,375 | 71,505 | 60,425 |
| August, 1922 | 63 | 4,629,392 | 2,905,209 | 3,029,823 | 63 | 5,207,228 | 3,808,224 | 4,220,055 | 11 | 189,698 | 84,313 | 69,435 |
| September, 1922 | 64 | 4,612,037 | 2,504,744 | 2,502,106 | 64 | 5,164,757 | 3,501,442 | 3,558,971 | 11 | 200,016 | 82,767 | 66,797 |
| October, 1922 | 64 | 4,682,958 | 2,674,662 | 2,588,770 | 64 | 5,488,033 | 3,787,758 | 3,420,680 | 11 | 213,942 | 85,480 | 71,275 |
| November, 1922 | 62 | 4,964,976 | 2,733,134 | 2,379,708 | 61 | 6,210,053 | 3,850,908 | 3,075,023 | 11 | 234,684 | 85,775 | 61,466 |
| December, 1922 | 59 | 4,599,208 | 2,656,942 | 2,934,079 | 59 | 5,732,125 | 3,411,074 | 3,825,949 | 10 | 244,061 | 77,221 | 64,570 |
| January, 1923 | 62 | 4,695,916 | 3,127,270 | 2,994,297 | 62 | 5,838,310 | 3,951,885 | 3,748,651 | 11 | 262,462 | 83,383 | 60,611 |
| February, 1923 | 60 | 5,224,387 | 3,217,987 | 2,588,639 | 60 | 6,771,958 | 4,039,202 | 3,001,697 | 11 | 270,191 | 75,457 | 63,394 |
| March, 1923 | 58 | 5,670,601 | 3,865,726 | 3,322,637 | 57 | 7,740,945 | 4,875,414 | 3,828,315 | 11 | 265,843 | 79,788 | 77,144 |
| April, 1923 | 56 | 6,088,272 | 3,539,326 | 2,976,160 | 55 | 8,394,184 | 4,259,558 | 3,535,635 | 11 | 260,631 | 71,468 | 72,609 |
| May, 1923 | 57 | 6,906,594 | 3,659,986 | 2,757,764 | 57 | 9,292,223 | 4,317,537 | 3,414,115 | 10 | 268,323 | 77,288 | 67,147 |
| June, 1923 | 55 | 7,040,600 | 2,956,943 | 2,502,185 | 54 | 8924,326 | 3,590,011 | 3,581,060 | 10 | 283,425 | 72,445 | 52,126 |
| July, 1923 | 54 | 6,471,124 | 1,992,989 | 2,534,425 | 52 | 7,396,444 | 2,625,118 | 3,942,247 | 10 | 263,891 | 42,345 | 45,219 |
| August, 1923 | 58 | 6,058,387 | 2,355,915 | 2,807,432 | 53 | 6,950,578 | 3,577,922 | 4,304,034 | 10 | 262,810 | 48,141 | 45,925 |
| September, 1923 | 60 | 5,397,557 | 2,029,581 | 2,623,775 | 55 | 6,457,455 | 3,254,575 | 3,683,514 | 10 | 249,379 | 37,074 | 45,971 |
| October, 1923 | 59 | 4,876,352 | 2,361,340 | 2,819,583 | 55 | 6,898,425 | 3,855,244 | 3,595,737 | 10 | 234,945 | 37,285 | 48,065 |
| November, 1923 | 55 | 4,689,329 | 2,399,725 | 2,456,296 | 53 | 6,693,639 | 3,451,716 | 3,422,426 | 11 | 213,686 | 32,577 | 49,471 |

## Rubber Exports from British Malaya and Ceylon

A recent cablegram from London reporting the gross and net exports of rubber from British Malaya, show these exports to have declined during November 1923 as compared to November 1922, and a considerable falling-off in the net exports for the first eleven months of 1923 as compared to a similar period of 1922. Re-exports however have almost doubled. The figures are as follows:

| | November 1923 LONG TONS | November 1922 LONG TONS | Eleven Months Ended November 1923 LONG TONS | Eleven Months Ended November 1922 LONG TONS |
|---|---|---|---|---|
| Gross Exports | 17,543 | 21,642 | 226,645 | 229,731 |
| Net exports | 10,101 | 16,373 | 166,007 | 196,837 |
| Re-exports | 7,442 | 5,269 | 60,638 | 30,894 |

The total exports of rubber from Ceylon from January to October, 1923, inclusive, are 29,891 long tons. For the corresponding months of 1922, they were 38,818 tons, making a loss of 8,927 tons.

## British Malayan Rubber Exports

### For the First Calendar Year of Restriction

Cable advices from London show that the gross exports of rubber from British Malaya for December amounted to approximately 25,500 tons, an increase of 7,073 tons over the corresponding month of 1922. The net exports were 17,900 tons, an increase of 4,042 tons over the corresponding net exports for that period of the preceding year. The re-exports amounted to 7,600 tons, an increase of 3,031 tons over the corresponding figure for 1922.

The table given below shows the gross, net and reexports of rubber from British Malaya for the years 1922 and 1923 by months. This total shows the gross exports for the calendar year 1923, 252,145 tons, as compared with 248,158 tons for 1922, a gain of 3,987 tons. The total of net exports of 1923 were 183,907 tons as compared with 212,695 tons for 1922, a loss of 28,788 tons. The total reexports from British Malaya for 1923 were 68,239 tons as compared with 35,463 tons for the year 1922, or a gain of 32,776 tons.

| | 1922 | | | 1923 | | |
|---|---|---|---|---|---|---|
| | Gross Exports | Net Exports | Re-Exports | Gross Exports | Net Exports | Re-Exports |
| January | 18,962 | 16,027 | 2,935 | 22,871 | 18,513 | 4,358 |
| February | 20,033 | 18,426 | 1,607 | 19,907 | 15,818 | 4,089 |
| March | 19,304 | 17,812 | 1,492 | 23,646 | 18,538 | 5,108 |
| April | 14,400 | 12,539 | 1,861 | 24,008 | 18,620 | 5,389 |
| May | 24,789 | 22,095 | 2,694 | 20,115 | 15,095 | 5,020 |
| June | 19,617 | 17,330 | 2,287 | 18,621 | 13,664 | 4,957 |
| July | 21,964 | 18,822 | 3,142 | 16,749 | 11,125 | 5,624 |
| August | 21,316 | 18,575 | 2,741 | 19,806 | 12,764 | 7,042 |
| September | 20,238 | 17,265 | 2,973 | 21,955 | 16,686 | 5,269 |
| October | 27,466 | 23,472 | 3,994 | 21,424 | 15,083 | 6,341 |
| November | 21,642 | 16,474 | 5,168 | 17,543 | 10,101 | 7,442 |
| December | 18,427 | 13,858 | 4,569 | 25,500 | 17,900* | 7,600* |
| Total | 248,158 | 212,695 | 35,463 | 252,145 | 183,907 | 68,239 |

*Figures subject to revision Figures given in *Long Tons.*

## Rubber Goods Exports

(First 11 months 1922-1923)

| | | 1922 | 1923 |
|---|---|---|---|
| Rubber Boots | Pairs | 226,040 | 354,420 |
| Rubber Shoes | " | 834,103 | 1,006,118 |
| Canvas rubber-soled shoes | " | 2,703,871 | 3,647,102 |
| Rubber Soles and heels | Pounds | 1,534,136 | 1,757,009 |
| Rubber Belting | " | 2,287,782 | 3,180,572 |
| Rubber Hose | " | 3,088,330 | 4,146,732 |
| Rubber Packing | " | 1,046,347 | 1,441,907 |

## Imports of Crude Rubber, Gutta-Percha, and Substitutes Therefor, into the United States During the Month of November, 1923

| CRUDE RUBBER: *From*— | *Pounds* | *Dollars* |
|---|---|---|
| Belgium | 22,734 | 6,291 |
| Germany | 192,520 | 34,259 |
| Italy | 20,980 | 7,702 |
| Netherlands | 937,994 | 248,408 |
| England | 523,800 | 148,402 |
| Nicaragua | 850 | 86 |
| Dominican Republic | 3,186 | 401 |
| Brazil | 1,618,825 | 332,147 |
| Colombia | 333,528 | 94,228 |
| Ecuador | 175,765 | 29,523 |
| Peru | 14,898 | 3,953 |
| Uruguay | 9,134 | 1,494 |
| British India | 525,899 | 142,348 |
| Ceylon | 2,855,185 | 785,045 |
| Straits Settlements | 21,689,076 | 5,905,021 |
| China | 28,477 | 3,987 |
| Chosen | 21,954 | 5,907 |
| Java and Madura | 2,008,451 | 533,649 |
| Other Dutch East Indies | 3,817,159 | 947,995 |
| Philippine Islands | 22,302 | 5,232 |
| Crude Rubber—TOTAL | 34,822,867 (15,546 long tons) | 9,236,078 |
| | 1923 | 1922 |
| *Total Importations Crude Rubber for 11 months ending Nov. 31* | 625,874,940 lb. (279,408 long tons) | 599,245,768 lb. (267,520 long tons) |
| Jelutong and Pontianack | 428,264 | 9,369,824 |
| Balata | 87,883 | 46,087 |
| Gutto-Percha | 24,817 | 5,732 |
| Other crude (including Guayule) scrap and reclaimed | 619,853 | 50,434 |
| Total unmanufactured | 35,983,684 | 9,369,824 |

## Importations of Crude Rubber into the United States by Months for Year Ended December 31, 1923

Compiled by The Rubber Association of America, Inc.
(Estimated net weights—long tons)

| Month | Plantations | Paras | Africans | Centrals | Manicoba and Matto Guayule | Grosso |
|---|---|---|---|---|---|---|
| January | 29,354 | 1,233 | 549 | 61 | — | — |
| February | 21,815 | 2,004 | 308 | 93 | — | — |
| March | 31,673 | 1,482 | 742 | 19 | — | — |
| April | 29,922 | 1,095 | 399 | 30 | 142 | — |
| May | 34,609 | 1,042 | 333 | 24 | 167 | 9½ |
| June | 31,574 | 1,032 | 286 | 42 | — | — |
| July | 17,459 | 636 | 146 | 23 | 328 | 17 |
| August | 18,083 | 297 | 88 | 30 | 164 | 12 |
| September | 10,890 | 542 | 69 | 65 | 139 | 30 |
| October | 18,728 | 410 | 155 | 106 | 139 | — |
| November | 12,380 | 725 | 146 | 85 | 52 | 4 |
| December | 26,004 | 1,427 | 282 | 65 | 92 | — |
| TOTALS | 282,491 | 11,925 | 3,503 | 643 | 1,224 | 72½ |

GRAND TOTAL—299,858½ long tons

| By Months (All grades) | |
|---|---|
| January | 31,197 |
| February | 24,220 |
| March | 33,916 |
| April | 31,588 |
| May | 36,184½ |
| June | 32,934 |
| July | 18,609 |
| August | 18,674 |
| September | 11,735 |
| October | 19,538 |
| November | 13,392 |
| December | 27,871 |
| TOTAL | 299,858½ |

| Arrivals of Plantations by Ports for Year 1923 | |
|---|---|
| Baltimore | 2,595 |
| Boston | 8,906 |
| Los Angeles | 4,515 |
| New York | 262,631 |
| Philadelphia | 180 |
| San Francisco | 2,924 |
| Seattle | 654 |
| Vancouver | 86 |
| TOTAL | 282,491 |


## The Market Pages --

Of every issue of THE RUBBER AGE give the rubber industry the latest price fluctuations and market conditions for rubber, fabrics and chemicals while they are still new and of the greatest service—*that's one advantage of reaching the rubber industry twice-a-month.*

# MARKETS

## Cottons and Fabrics

NEW YORK, January 17, 1924

Notwithstanding many factors which, if given their true value, would seem to furnish ample ground for a healthy buying movement and firm price course the trend of the raw cotton futures market has been irregularly downward since our last report, and losses ranging from ¾ of a cent to more than 1½ cents a pound have been recorded during that interval.

***Consumption Figures Bullish***

In the first place, the cotton consumption figures for December, issued last Tuesday, showed an increase of about 80,000 bales over the most bullish private estimates made previous to the official announcement from Washington. This did have an electrical effect on the market temporarily, and prices were run up from 50 to more than 100 points during the session, but then the old reactionary tendency reasserted itself and yesterday's trading witnessed the wiping out of practically all that was left of those gains.

The Government figures which showed December consumption to be 461,560 bales bore ample testimony to the truth of persistant reports of good mill demand during the final month of last year. The most optimistic of private interests had not been prone to look for takings of more than 380,000 bales which was about the figure that had been predicted by a ginners' association.

The fact, however, that the trade still is slow to weigh these reports as carefully as it might is to be witnessed in the weakness of the market during the past few sessions despite continued favorable reports from mill centres since the beginning of the new year.

### EXPERT THINKS BRITISH COTTON INDUSTRY SAFE

The British cotton goods industry is in no danger of being ruined because of a lack of American raw cotton, Theodore H. Price told members of the British Empire Chamber of Commerce in the United States at the monthly luncheon meeting at the Bankers' Club. Mr. Price based this contention on the belief that the size of the American crop is dependent solely upon the price that cotton growers can get. He said that the migration of the negroes to the North and the ravages of the boll weevil are factors which can be overcome. The greater use of linen and the possible discovery of a synthetic cotton are factors that may offset the shortage of raw cotton in his opinion.

***Export Buying Lags***

Weakness of foreign exchange has undoubtedly played a leading role in professional calculations for it has brought about an appreciable decrease in the volume of export demand. Manchester, however, is said to be taking quite a bit of cotton for this time of year, probably in response to the outlook for higher prices ultimately. Liverpool futures have been showing about the same degree of heaviness as American with fluctuations more irregular due to the weird vagaries of exchange.

***New Crop Delays***

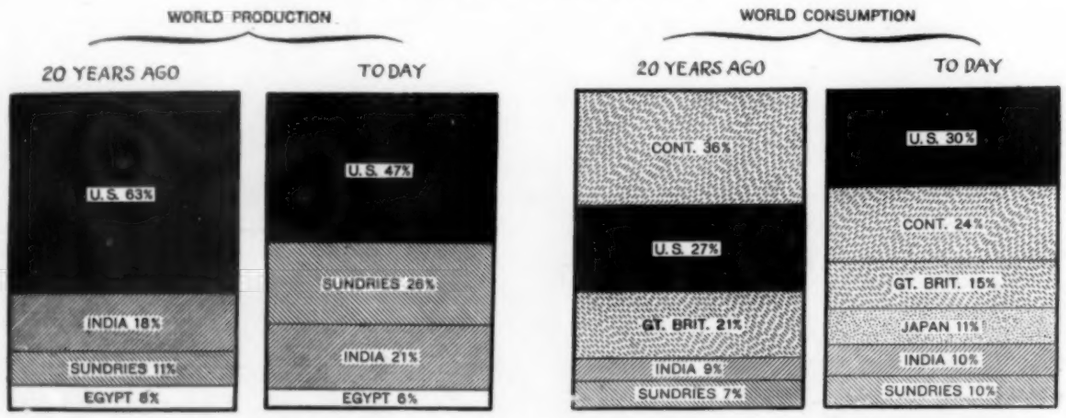
Another bullish factor has been the delay in new crop preparations in the Southwest and some parts of the South. Heavy rains and cold weather coupled with forecasts of heavy storms in the Gulf States have conspired to delay plowing and preclude the possibility of an early crop start, though there are many supporters of the view that there still is time to get the new crop on its way in normal course. The outlook, however, is not as good as it might be and the market has reflected this by showing relatively more strength on distant positions than on old crop months. October contracts, for instance, have been in rather limited supply very recently, and are now only a little more than 400 points under the old crop, as compared with more than 500 points several days ago.

The reason for the decline, then, cannot easily be traced to consideration of the news from any angle. The most apparent reason, therefore, is that the failure of demand to broaden under the stimulus of bullish news has created a lack of confidence in the ranks of the longs, while

*(Continued on Page 311)*

### COTTON — FROM PRODUCER TO CONSUMER

**Comparison with twenty years ago**

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# Chemicals and Compounding Ingredients

**THE INDUSTRIAL CHEMICAL MARKET**—NEW YORK, January 18, 1924—General conditions in the market for industrial chemicals have continued to show steady improvement throughout the month to date, and at present there are no signs of a let-down in buying activity. Withdrawals on contracts have actually increased over December, which is contrary to rule in a large number of items. This has enhanced the spot market to the extent that prices in many instances show substantial advances. Rubber chemicals generally are firmer and only in cases where there has been accumulation caused by over-anticipation of requirements have prices showed any easiness. In addition to the domestic situation the export-import side has showed improvement, a larger movement in each direction being reported by leading interests of that branch. Outstanding among the price features has been the strength displayed by the alkalies.

## ACCELERATORS

*Organic*

| | | | |
|---|---|---|---|
| Aldehyde ammonia, crystals | lb. | $ .90 @ | .95 |
| Aniline oil, drums | lb. | .17 @ | .17½ |
| Diphenylguanidine | lb. | 1.10 @ | 1.15 |
| Excellerex, | lb. | .45 @ | .50 |
| Formaldehyde-Aniline | lb. | .50 @ | — |
| Hexamethylene-tetramine | lb. | .75 @ | .80 |
| Paraphenylenediamine | lb. | 1.35 @ | 1.40 |
| Super-Sulphur No. 1 | lb. | .50 @ | .60 |
| Super-Sulphur No. 2 | lb. | .25 @ | .35 |
| Tetramethyl—Thiuramdisulphide | lb. | 6.00 @ | — |
| Thiocarbanilide, kegs | lb. | .35 @ | .40 |
| Vulcocene | lb. | .35 @ | — |

*Inorganic*

| | | | |
|---|---|---|---|
| Lead, sublimed blue | lb. | .09¼ @ | — |
| Lead, white | lb. | .09 @ | .09½ |
| Litharge, domestic | lb. | 10.65 @ | 14.25 |
| Lime, Superfine | lb. | .01½ @ | .03½ |
| Magnesia, calcined, light, | lb. | .23 @ | .24 |
| extra light | lb. | .45 @ | .60 |
| heavy | lb. | .04½ @ | .06 |

## COLORS

| | | | |
|---|---|---|---|
| *Blacks* | | | |
| Arrow, air-floated | lb. | .09 @ | .10 |
| Bone Black | lb. | .05½ @ | .07½ |
| Carbon " | lb. | .07½ @ | .09 |
| Drop " | lb. | .07½ @ | .10 |
| Ivory " | lb. | .15 @ | .45 |
| Lamp " | lb. | .12 @ | .40 |
| Micronex | lb. | .09 @ | .14 |
| *Blues* | | | |
| Cobalt | lb. | .21 @ | .23½ |
| Prussian | | .43 @ | .45 |
| Ultramarine | lb. | .08 @ | .35 |
| *Browns* | | | |
| Iron oxide | lb. | .04½ @ | .05½ |
| Sienna, Italian, | lb. | .06 @ | .14½ |
| Umber, Turkey, | lb. | .04 @ | — |
| Vandyke, domestic | lb. | .03½ @ | .04½ |
| *Greens* | | | |
| Chrome, light | lb. | .28 @ | .31 |
| medium | lb. | .30 @ | .35 |
| dark | lb. | .32 @ | .43 |
| commercial | lb. | .12 @ | — |
| *Reds* | | | |
| Antimony crimson, 15/17% F.S. | lb. | .39 @ | .41 |
| sulphur free | lb. | .39 @ | .50 |
| golden, 15/17% F.S. calcium and sulphur free | lb. | .20 @ | .22 |
| | lb. | .40 @ | — |
| red sulphuret 15/17% F.S. | lb. | .15 @ | .16 |
| Indian, English | lb. | .11 @ | .13 |
| Para toner | cwt. | 1.00 @ | 1.10 |
| commercial | | .16 @ | .18 |
| Red Oxide, reduced | lb. | .08 @ | .12 |
| pure | lb. | .13 @ | — |
| Toluidine toner | lb. | 2.10 @ | 2.25 |
| Venetian red | lb. | .03½ @ | .06 |
| Vermillion, quicksilver, English | lb. | 1.20 @ | — |
| domestic | lb. | .25 @ | .30 |
| *Whites* | | | |
| Albalith | lb. | .07 @ | .07½ |
| Aluminum bronze | lb. | .55 @ | .60 |
| Azolith | lb. | .06½ @ | .07 |
| Lithopone, domestic (factory) | lb. | .06⅝ @ | .06½ |
| Zinc Oxide—American Process American Horse Head special | lb. | .08⅛ @ | — |
| XX red | lb. | .07⅞ @ | .08⅛ |
| Kadox, black label, bags, cars | | .09½ @ | — |
| blue " " " | | .09¼ @ | — |
| red " " " | | .09 @ | — |
| American Azo: ZZZ (lead free) | lb. | .07¾ @ | .08¼ |
| ZZ (under 5 per cent leaded) | lb. | .07 @ | .07½ |
| Z (8-10 per cent leaded) | lb. | .06¾ @ | .07¼ |
| Zinc Oxide—French Process White seal | lb. | .12 @ | .12¼ |
| Green seal | lb. | .10¾ @ | .11¼ |
| Red seal | lb. | .09¾ @ | .10¼ |
| *Yellows* | | | |
| Chrome, light | | .17½ @ | .18 |
| dark and medium | lb. | .17½ @ | .18 |
| Cadmium Sulphide | lb. | 1.75 @ | 2.50 |
| Ocher, French | lb. | .01¾ @ | .03 |
| domestic | lb. | .01½ @ | .03 |

## COMPOUNDING INGREDIENTS

| | | | |
|---|---|---|---|
| Aluminum flake | ton | 23.00 @ | 29.00 |
| hydrate light | lb. | .18 @ | .20 |
| Ammonia carbonate, | lb. | .09¼ @ | .10½ |
| Barium carbonate, | ton | 85.00 @ | 90.00 |
| Barium Dust | lb. | .05 @ | .06 |
| Barytes southern, off-color, | ton | 15.00 @ | 18.00 |
| Western, prime white | ton | 23.00 @ | 24.00 |
| Basofor | lb. | .04¾ @ | — |
| Blanc fixe, dry f.o.b. works | lb. | .04 @ | .04¼ |
| Carrara filler | lb. | .01½ @ | .02 |
| Chalk, precipitated, extra light | lb. | .04¼ @ | .05 |
| heavy | lb. | .03¼ @ | .04 |
| Clay, China, domestic, | ton | 15.00 @ | 16.50 |
| Dixie | ton | 22.00 @ | 32.00 |
| Blue Ridge | ton | 12.00 @ | 25.00 |
| Fossil flour | lb. | .04 @ | — |
| Glues, extra white | lb. | .30 @ | .40 |
| medium white | lb. | .20 @ | .26 |
| cabinet | lb. | .18 @ | .28 |
| cabinet low grade | lb. | .15 @ | .18 |
| common bone | lb. | .11 @ | .15 |
| Graphite flake, bbls. | lb. | .06½ @ | .12 |
| amorphous | lb. | .04 @ | .10 |
| Infusorial earth, powdered | ton | 60.00 @ | — |
| bolted | ton | 70.00 @ | — |
| Liquid latex | gal. | 1.30 @ | — |
| Mica, powdered | lb. | .15 @ | — |
| Rotten Stone (powdered) | lb. | .02½ @ | .04½ |
| Soapstone, powdered | ton | 15.00 @ | 20.00 |
| Starch, powdered | cwt. | 3.07 @ | 3.34 |
| Talc, domestic | ton | 15.00 @ | 18.00 |
| French | ton | 20.00 @ | — |
| French, high grade | ton | 40.00 @ | — |
| Italian | ton | 47.00 @ | 58.00 |
| Terra Alba | cwt. | 1.85 @ | 2.00 |
| Tripoli, white | lb. | .02 @ | .02¼ |
| Whiting, commercial | cwt. | 1.00 @ | — |
| gilder's bolted | cwt. | 1.10 @ | — |
| English cliffstone | cwt. | 1.50 @ | — |
| Paris white American | cwt. | 1.25 @ | — |
| Quaker | ton | 13.00 @ | 15.00 |
| Wood pulp XXX | ton | 35.00 @ | — |
| " " X | ton | 25.00 @ | — |
| Zinc Oxide— lead free | lb. | .07⅞ @ | — |
| 5% leaded | | .07 @ | — |
| 10% lead sulphate | lb. | .06¾ @ | — |
| 20% lead sulphate | lb. | .06¾ @ | — |
| 35% lead sulphate | lb. | .06¾ @ | — |

*(Also see whites)*

## MINERAL RUBBER

| | | | |
|---|---|---|---|
| Genasco (factory) | ton | 50.00 @ | 52.00 |
| Granulated M.R. | ton | 36.00 @ | 47.00 |
| Hard hydrocarbon | ton | 30.00 @ | 40.00 |
| Soft hydrocarbon | ton | 30.00 @ | 40.00 |
| Pioneer M.R. | ton | 42.00 @ | 44.00 |
| 320/340 M. P. hydrocarbon (c. l. factory) | ton | 45.00 @ | 50.00 |
| 300/310 M. P. hydrocarbon (c.l. factory) | ton | 40.00 @ | 45.00 |
| Synpro, granulated, M. R. (factory) | ton | 55.00 @ | 70.00 |

## SOFTENERS

| | | | |
|---|---|---|---|
| *Acids* | | | |
| Acetic, 28 per cent | cwt. | 3.38 @ | 3.63 |
| Cresylic, 97% | gal. | .78 @ | .90 |
| 95% | gal. | .74 @ | .80 |
| Muriatic, 20% | 100 lb. | 1.00 @ | 1.10 |
| Nitric, 36 degrees | cwt. | 4.50 @ | 5.00 |
| Sulphuric, 60 degrees | ton | 11.00 @ | 12.00 |
| 66 degrees | ton | 15.00 @ | 16.00 |
| Tartaric, crystals | lb. | .30 @ | — |
| *Alkalies* | | | |
| Caustic soda, 76% | cwt. | 3.76 @ | 3.91 |
| Soda ash, 58% | cwt. | 2.04 @ | 2.19 |
| *Oils* | | | |
| Castor, No. 3, bbls. | lb. | .14½ @ | — |
| Chinawood, bbls. | lb. | .21 @ | — |
| Corn, crude, bbls. | lb. | .11¾ @ | — |
| refined | lb. | .13½ @ | — |
| Cottonseed, crude | | 9.75 @ | — |
| Glycerine, | lb. | .16½ @ | .17 |
| Linseed, domestic | gal. | .91 @ | — |
| Palm, Niger | lb. | .07¼ @ | — |
| Lagos | lb. | .08⅛ @ | .08¼ |
| Peanut, domestic, crude | lb. | .13 @ | — |
| Petroleum, amber | lb. | .04 @ | — |
| dark, amber | lb. | .03⅝ @ | — |
| Pine, steam distilled | lb. | .60 @ | — |
| Rapeseed, refined | gal. | .82 @ | — |
| blown | gal. | .90 @ | — |
| Rosin, first rectified | gal. | .43 @ | — |
| second refined | gal. | .46 @ | — |
| Tar, commercial | gal. | .30 @ | .50 |
| Soya Bean | | .11½ @ | .11¾ |
| *Resins and Pitches* | | | |
| Cumar resin, hard | lb. | .09 @ | .10 |
| soft | lb. | .09 @ | .10 |
| Parra M.R. | lb. | .06 @ | .07 |
| Tar Retort | bbl. | 10.75 @ | — |
| kiln burned | bbl. | 11.00 @ | — |
| Pitch, Burgundy | lb. | .05 @ | .06 |
| coal tar | gal. | .06 @ | .08 |
| pine tar | bbl. | 6.50 @ | — |
| Rosin, grade K | bbl. | 6.30 @ | — |
| Shellac, fine orange | lb. | .65 @ | .66 |
| *Solvents* | | | |
| Acetone, drums | lb. | .25 @ | — |
| Alcohol, denatured, No. 1 bbls. | gal. | .52½ @ | .56½ |
| Benzal, 90% | gal. | .21 @ | .26 |
| pure | | .23 @ | .28 |
| Carbon bisulphide | lb. | .06½ @ | .07 |
| Tetrachloride | lb. | .09 @ | .10½ |
| Dimethylaniline | lb. | .39 @ | .41 |
| Motor gasoline, steel bbls. | gal. | .17½ @ | — |
| Naptha, V. M. & P. | gal. | .16½ @ | — |
| Toluene | | .26 @ | .31 |
| Turpentine, spirits | gal. | 1.02 @ | — |
| wood | gal. | .90 @ | — |
| *Waxes* | | | |
| Bayberry | lb. | .25 @ | .26 |
| Beeswax | lb. | .40 @ | .42 |
| Carnauba, No. 1 | lb. | .36 @ | .40 |
| Ceresin, white | lb. | .10 @ | .11 |
| Montan, crude | lb. | .06 @ | .06½ |
| Ozokerite, black | lb. | .23 @ | .24 |
| green | lb. | .27 @ | .28 |
| Paraffine | lb. | .03½ @ | .03⅝ |
| Phenol | lb. | 25 @ | .26 |
| Sweet wax | lb. | .10 @ | .12 |

## SUBSTITUTES

| | | | |
|---|---|---|---|
| Black | lb. | .09 @ | .14 |
| White | lb. | .10 @ | .16 |
| Brown | lb. | .10 @ | .15 |
| Brown factice | lb. | .09½ @ | .13 |
| White factice | lb. | .08½ @ | .15 |

## VULCANIZING INGREDIENTS

| | | | |
|---|---|---|---|
| Black hyposulphite | lb. | .21 @ | .22 |
| Sulphur Chloride (drums) | lb. | .04 @ | .05 |
| Sulphur flour Commercial, (bags) | | 1.35 @ | 1.70 |
| Superfine | | 2.00 @ | 2.40 |
| Bergenp't brand (bags) | cwt. | 2.45 @ | 2.75 |
| (bbls.) | cwt. | 2.70 @ | 3.25 |

# Chemicals

*Antimony Sulphurets*— Leading interests report a much better demand, firm tone and limited supplies. Crimson has been advanced 1 to 2 cents and is now being sparingly offered at 39 to 41 cents a pound.

*Caustic Soda*—A very good movement is reported in this product, especially on contracts, bookings of which are heavy for so early in the year. Spot demand has also picked up, with numerous sales of small lots at firm quotations. It is said that the movement for the season exceeds all previous records in both the spot and contract market. There has been some decline in the export trade during the past few weeks, this being ascribed to the political situation in Mexico from which direction the drop has been most keenly felt by exporters. Prices are firm but quotably unchanged on the basis of $3.10 per 100 lbs. for 76 per cent solid caustic in carlots at the works.

*Acetic Acid*—The market is in a very healthy condition, there being good demand, steady movement and ample, but closely held stocks. Resellers are not offering as freely as formerly. The tone is very steady in sympathy with the position of basic material. Prices unchanged on the basis of $3.38 to $3.63 for 28 per cent.

*Lithopone*—Producers are said to be doing a steadily increasing business in lithopone. Currently the demand is very satisfactory and as supplies are small the general inclination is to look for increased producing activity in the near future. This will mean enlarging the capacity of many plants which are now unable to keep abreast of current orders. The tone continues firm and some observers are predicting higher prices in the near future. Domestic still is quoted at 6½ cents a pound for carlots in bags.

*Zinc Oxide*—The tire industry is reported to be taking about normal quantities of this material for this time of year. In all producing and marketing quarters the feeling prevails that tire makers will consume more than ever in 1924. At present, however, it cannot be said that more than a normal amount is being taken. The tone is much steadier since the recent reduction in prices. French process, red seal, is quoted at 9¾ cents a pound.

*Barytes*—Despite continued good consumption the tone rules easy on account of competition of foreign brands which are arriving regularly and liberal offers of domestic. Producers of the latter have been forced to shade quotations to get their share of the business. During the period under review there has been a reduction of $2.00 to $3.00 a ton in domestic grades, bringing the price, f.o.b. Missouri points, to $23.00 to $24.00 a ton.

*Carbon Black*—The market is suffering from more production than is necessary to meet present consuming requirements. Notwithstanding this, there seems to be a movement to increase the output rather than hold it in check. As a consequence of this prices are depressed and while some makers tenaciously hold their asking levels around 7c a pound, it is not difficult to find supplies as low as 5½ or 6 cents.

# Reclaimed Rubber

NEW YORK, January 18, 1924

Reclaimers report that very quiet conditions still prevail in their market. This situation has been disappointing in that the expected buying in quantity has failed to materialize. Unusually clement weather for this time of year is blamed for the present state of affairs. The rubber boot and shoe industry has been hit by this, as evidenced by the large number of New England mills that have been forced to curtail or entirely suspend manufacturing operations. This, of course, has had its reflection in reclaimed stock. In addition, there has been a noticeable let-up in the call from manufacturers of mechanical goods. The reason for this is not so apparent as industrial conditions throughout the country are anything but faltering. Reclaimed rubber prices show practically no changes from our last report. In several instances values are virtually nominal owing to the deplorably slow call for those items.

| | | | |
|---|---|---|---|
| **Floating Tube** | .15¼ | @ | .15½ |
| Friction | .22½ | @ | .23½ |
| Boots and Shoes (unwashed) | .10 | @ | .10¼ |
| Boots and Shoes (washed) | .13 | @ | .13¼ |
| **Mechanical** | .09½ | @ | .10⅛ |
| Hose | .10 | @ | .11 |
| **Tires, truck** | .08¼ | @ | .08⅝ |
| Tires, auto, black | .09 | @ | .09¼ |
| Black (washed) | .11 | @ | .11¼ |
| White | .15 | @ | .15¼ |
| Dark Gray | .10 | @ | .10¼ |
| Light Gray | .11 | @ | .11¼ |

# Scrap Rubber

NEW YORK, January 18, 1924

Optimism which dominated scrap rubber trade sentiment at the start of the new year is not so strongly in evidence at the present time. This is ascribable to several factors, the most prominent of which are lack of real demand from reclaimers and larger supplies resulting from the open winter weather this year. The unusual mildness of the season has enabled dealers to get out in the yards as seldom before with the result that there has been no little congestion of supplies and, consequently, much keener competition. Prices have reflected these conditions by showing numerous declines, which although of not great degree, have established values at the lowest levels in several months. Boots and shoes have been most plentiful and subject to severest weakness.

| | | | |
|---|---|---|---|
| Auto tire peelings | .01 | @ | .01⅛ |
| Standard White auto ton | 22.00 | @ | 25.00 |
| Mixed auto ton | 12.00 | @ | 13.00 |
| Bicycle tires ton | 8.00 | @ | 9.00 |
| Clean solid truck tires | .00¾ | @ | .00⅞ |
| Arctics, trimmed | .01⅜ | @ | .01⅞ |
| Inner tubes, No. 1 | .03½ | @ | .03⅝ |
| Inner tubes, compounded | .02⅜ | @ | .02½ |
| Inner tubes, red | .02¼ | @ | .02⅜ |
| Battery jars, clean hard rubber | .01 | @ | .01¼ |
| Rubber Hose ton | 10.00 | @ | 12.00 |
| Red packing | .01 | @ | .01¼ |
| **White druggist sundries** | .01¾ | @ | — |
| **Boots and shoes** | .02½ | @ | .02⅝ |
| Arctics, untrimmed | .01½ | @ | .01⅝ |

# Crude Rubber

NEW YORK, January 16, 1924

Generally speaking, conditions in the crude rubber market during the past two weeks have remained much the same as noted in our last report of two weeks ago. Price changes have been narrow and so far as indicating the probable future trend, absolutely meaningless. The only unusual occurrence that could have possibly influenced a more than ordinary change for the better in values was a wharf fire in London which ate up about 1,800 tons of crude rubber that had not been moved to warehouses. The effect of this, however, was only momentary and after a short rise of limited extent prices resumed their sagging tendency.

Best prices of the past fortnight were reached on January 8 when as high as 26¾ cents a pound was reported paid for ribbed smoked sheets for prompt delivery in this market. At the same time the spot position brought 14½ d a pound in London. This strength immediately followed the wharf fire noted above. Since then the tendency has been irregularly downward, so at the present writing it is possible to buy spot ribs at 26¼ cents a pound, though the tone is firmer today. The forward deliveries also shared the early rise, and on January 8 sellers were holding April-June at 28 cents a pound, though reporting no bids above 27¾ cents at that time. Today finds April-June delivery almost a cent a pound lower, with the nearer forwards showing proportionate losses.

The spread between London and Singapore prices has continued to widen in favor of the former enabling English and American importers to purchase shipments more advantageously, but whether they have availed themselves of this opportunity is questionable owing to the sizable stocks now held here as a result of the December imports of between 26,000 and 27,000 tons which, according to figures compiled by the Rubber Association of America, represented an increase of about 100 per cent over November imports. In addition, it is probable that January landings will show quite large when figures are published, for there have been some good arrivals recently. This does not presume that the statistical position in this country is weak; to the contrary, the majority of importers and dealers estimate it to be quite good, but there appears to be a lack of confidence generally. This feeling may be ascribed to the failure of the market to reflect fundamentally sound conditions and prospects of a banner year in the industry.

Some experts call attention to growing uneasiness in the English trade over the increasing output of rubber in the Dutch possessions. Granted that this is true the matter offers little cause for concern as the present Dutch output of about 70,000 tons annually is barely sufficient to meet this country's requirements for three months and in the several years that must pass before this can be increased to an

*(Continued on next page)*

# Rubber Patents

GRANTED JANUARY 1, 1924

1,479,010. Valve Pad for Pneumatic Tires. Nathan F. Rice, Chicago, Ill.

1,479,068. Inner Tubes for The Tires of Vehicles. David Jacob Hammer, Pittsburgh, Pa., assignor of one-half to James H. Flinn and James McEwan, both of Pittsburgh, Pa.

1,479,163. Toy Balloon. Thomas P. Tyrrell, Akron, Ohio.

1,479,330. Plastic Product. Walter O. Snelling, Allentown, Pa.

1,479,394. Manufacture of Rubberized Fabric. James Meade, Stoughton, Mass.

1,479,402. Armor Protection for Pneumatic Tires. Sandor J. Soltesz, New York, N. Y.

1,479,411. Resilient Wheel. Morton Harloe, Winchester, Va.

1,479,497. Process of Attaching Rubber Soles to Boots and Shoes. David A. Cutler, Atlantic, Mass.

1,479,755. Flexible Coupling. Robert J. Stokes, Trenton, N. J., assignor to Thermoid Rubber Company, Hamilton Township, N. J. a corporation of New Jersey.

GRANTED JANUARY 8, 1924

1,479,798. Rubber Sole. George Ferguson, Wollaston, Mass. assignor to United Shoe Machinery Corporation, Paterson, N. J., a corporation of New Jersey.

1,479,940. Collapsible Rim for Automobile Tires. Harry Swerdlow, New York, N. Y.

1,480,201. Cushion Tire. Stuart L. Everhart, Dowagiac, Mich.

1,480,250. Inner Tube. Edwin Fetter, Baltimore, Md.

1,480,376. Method of Forming Hollow Inflated Rubber Articles. Robert C. Darney, Akron, Ohio, assignor to The Miller Rubber Company, Akron, Ohio, a Corporation of Ohio.

# Trade Marks

JANUARY 1, 1924

The trade mark consists of a relatively narrow red band arbitrarily placed on the belt. No. 167,606. The Dayton Rubber Manufacturing Company, Dayton, Ohio. Fan Belt.

DAISY—No. 166,751. Schacht Rubber Mfg. Co., Huntington, Ind. Rubber Fruit-Jar Rings.

MYSTO SPRAY-BATH—No. 181,184. W. S. Grant Company, New York, N. Y. Bath Sprays With Rubber Tubing Attachments.

WORLD OVER—No. 183,702. Max Gustin doing business as M. Gustin Co., New York, N. Y. Shoes, Boots, Pumps, Slippers and Slipper Soles made of Leather, Fabric, Rubber combinations thereof.

ST. LOUE ROKER SHOES—No. 184,102. Quality Shoe Shop, Washington, D. C. Leather, Rubber and Fabric Shoes.

TUPHINE—No. 184,804. William Sykes, Limited, Horbury and London, England. Footballs, Basketballs, Soccer Balls and Punching Balls.

ADMIRAL—No. 186,365. Arthur A. Guenther, doing business as Admiral Tire and Rubber Co., St. Louis, Mo. Automobile Tires Made of Rubber and of Rubber and Cotton Fabric, and Automobile Inner Tubes Made of Rubber.

VANITONE—No. 186,730. Van Vleet-Mansfield Drug Co., Memphis, Tenn. Rubber bands, Rubber Erasers and Writing Materials.

SENTINEL—No. 186,827. The Columbia Tire & Rubber Company, Mansfield, Ohio. Inner Tubes, Pneumatic Tires, Cord Tires and Fabric Tires.

REDICUT—No. 187,944. Emmett F. Hartley, doing business as Hartley Rubber Co., Huntington, W. Va. Repair Kit for Pneumatic Tires.

SNAP—No. 187,972. John Wanamaker, New York, N. Y. Golf Balls.

COMMODORE CORD—No. 188,028. The Salem Rubber Company, Salem, Ohio. Resilient Vehicle Tires and Inner Tubes of Rubber or Rubber and Fabric.

GASPAC—No. 188,396. Ajax Rubber Company, Inc., Millbrook, N. Y. Inner Tubes for Tires.

ALLWORK—No. 178,033. The Manhattan Rubber Manufacturing Company, Passaic, N. J. Machinery Belting, Composed of Rubber or Rubber and Fabric. (Mark not subject to opposition).

JANUARY 8, 1924

The mark consists of a small patch of rubber, substantially rectangular in form, and distinguishable from the rest of the tire, placed on the side of tire adjacent the flanges of the rim. No. 136,120. The Firestone Tire and Rubber Company, Akron, Ohio. Solid Tires Composed of Rubber, or Rubber and Fabric.

COLUMBIA CHEMICAL COMPANY, BARBERTON, OHIO, U. S. A.—No. 171,510. Pittsburgh Plate Glass Co., Pittsburgh, Pa. Soda Ash and Caustic Soda.

MIAMI—No. 175,321. New York Belting and Packing Company, New York, N. Y. Belting Made of Rubber and Fabric.

AIR-GAGE—No. 179,953. The Paul Rubber Company, Salisbury, N. C. Automobile Inner Tubes.

GOLD-BOND—No. 184,115. The Better Tires Company, Chicago, Ill. Rubber Inner Tubes for Automobiles and the Like.

WEDGE-TREAD—No. 178,442. The Miller Rubber Company, Akron, Ohio. Rubber and Rubber and Fabric Tires. (Mark not subject to opposition).

PARAMOUNT—No. 178,448. Joseph J. Kleiner and Company, New York, N. Y. Hospital Goods of Rubber and Other Materials. (Mark Not Subject to Opposition).

# Crude Rubber

*(Continued from page 310)*

extent where it will loom as an important fraction of the world's output. In the meantime it is predicted that America will be consuming as much rubber as can be produced under unrestricted tapping and development in the chief areas, and probably more.

The tire manufacturers have not been buying rubber as actively as had been anticipated late last year. Their requirements for the coming months are admittedly large, but they have been confining their orders to prompt and nearby deliveries, and in few cases have made engagements for sizable blocks. The crude rubber trade, however, looks for the test of the market to come within the next 30 days and is quite confident that the consuming element will take hold in a more aggressive fashion.

Today's closing prices are as follows:

### NEW YORK MARKET

| | | | |
|---|---|---|---|
| **Plantations** | | | |
| First Latex, spot | .26¾ | @ | — |
| Ribbed Smoked Sheets | .26¼ | @ | .26⅜ |
| Feb. | .26¼ | @ | .26⅜ |
| Mar. | .26½ | @ | — |
| Apr.-June | .26⅞ | @ | — |
| Amber Crepe No. 1, spot | .25¼ | @ | — |
| Amber Crepe No. 2, spot | .24¾ | @ | — |
| Amber Crepe No. 3, spot | .24¼ | @ | — |
| Light Clean Thin Brown Crepe | .25 | @ | — |
| Specky Brown Crepe | .24½ | @ | — |
| Roll Brown Crepe, spot | .24¾ | @ | — |
| **Paras** | | | |
| Madeira Fine | .23 | @ | — |
| Acre Fine | .22¼ | @ | — |
| Up-river Fine | .22 | @ | — |
| Up-river Medium | .19½ | @ | .19¾ |
| Up-river Caucho Ball (shipment) | .19¾ | @ | — |
| Up-river Coarse | .18 | @ | — |
| Islands Fine | .19½ | @ | — |
| Cameta | .12½ | @ | — |
| Xingu Ball | .17½ | @ | — |
| **Pontianac** | | | |
| Prime Pressed | .13½ | @ | — |
| Plantation | .08½ | @ | — |
| Bangermassin | .09 | @ | — |
| Siak Gutta Percha | .17 | @ | — |
| Prime Macassar | 2.50 | @ | 3.00 |
| **Balata** | | | |
| Columbia Block | .63 | @ | .65 |
| Venezuela Block | .70 | @ | .72½ |
| Guayule, washed and dried | .25 | @ | — |

### LONDON MARKET

| | |
|---|---|
| Standard Ribbed Smoked Sheets— | |
| Spot | 14⅛d |
| Feb. | 14¼ |
| Mar. | 14⅜ |
| Apr.-June | 14⅝ |
| July-Sept. | 14⅞ |

### SINGAPORE MARKET

| | |
|---|---|
| Standard Ribbed Smoked Sheets— | |
| Spot | 13½d |
| Feb.-Mar. | 13⅞ |
| Apr.-June | 14⅛ |
| July-Sept. | 4⅜ |

# Cotton Markets

*(Contined from page 308)*

providing an incentive for shorts to pursue their hammering tactics almost unmolested.

| | Open. | High. | Low. | Jan. 16 Close. | Jan. 3 Close. |
|---|---|---|---|---|---|
| Jan. | 33.96 | 34.00 | 33.70 | 33.25@—— | 34.65 |
| March | 34.18 | 34.36 | 33.53 | 33.53@33.60 | 35.08 |
| May | 34.31 | 34.55 | 33.70 | 33.73@33.80 | 35.30 |
| June | 34.15 | 34.15 | 34.15 | 33.32@—— | —— |
| July | 33.28 | 33.57 | 32.60 | 32.60@32.70 | 34.28 |
| Aug. | 31.05 | 31.05 | 31.05 | 30.50@—— | —— |
| Oct. | 28.59 | 28.80 | 28.10 | 28.10@28.16 | 28.67 |
| Dec. | 28.08 | 28.10 | 27.90 | 27.63@—— | 28.05 |

### *EXTRA STAPLE COTTON*

More activity is noted in the extra staple cotton market than for many weeks, the inquiry being of a wider scope and embracing most of the different grades, with prices showing a slight easing off than those prevailing at the first of the year, this being more noticeable in the medium grades. Spot cotton has shown a wide preference over shipment cotton, and in several instances commanded a slight premium.

Extra staple cotton prices are quoted below, based on middling grade cotton, classed as to staples on a very high and exacting standard, f.o.b., New Bedford:

1 1-8 inch, 36½ @ 37 cents.
1 3-16 inch, 37 @ 37½ cents.
1 1-4 inch, 38 @ 38½ cents.
1 5-16 inch, 39 cents upward.

### *TIRE FABRICS*

Some mills report activity filling contracts for first quarter of 1924. Little business has been placed for the second quarter, small orders being the rule. Inquiry however is good with prices expected to show an advance very shortly. Special tire fabric constructions are being given much consideration today and a number of mills are working on such fabrics.

| | | | |
|---|---|---|---|
| **CORD FABRICS** | | | |
| Combed Sakellarides | Nominal | | |
| Combed Peeler lb. | .80 | @ | .83 |
| Carded Peeler lb. | .65 | @ | .67 |
| Combed Egyptian uppers lb. | .78 | @ | .83 |
| Carded Egyptian uppers lb. | .70 | @ | .75 |
| **SQUARE WOVEN** | | | |
| 17¼-ounce Egyptian uppers, combed lb. | Nominal | | |
| 17¼-ounce Egyptian uppers, carded lb. | .69 | @ | .70 |
| 17¼-ounce Sakellarides, combed lb. | Nominal | | |
| 17¼-ounce Peeler, combed lb. | Nominal | | |
| 17¼-ounce Peeler, carded lb. | .63 | @ | .69 |
| **SHEETINGS** | | | |
| 40-inch 2.50-yard yd. | .18¼ | @ | .18¾ |
| 40-inch 2.85-yard yd. | .16 | @ | .16¾ |
| 40-inch 3.15-yard yd. | .16¾ | @ | .17 |
| 40-inch 3.60-yard yd. | .14 | @ | .14½ |
| 40-inch 3.75-yard yd. | .13¾ | @ | .14 |
| 40-inch 4.25-yard yd. | .11½ | @ | .12 |
| **DUCKS** | | | |
| Belting lb. | .55 | @ | .58 |
| Hose lb. | .55 | @ | .58 |
| Enameling lb. | .58 | @ | .65 |
| Shoe Ducks lb. | .61 | @ | .63 |
| Single filling lb. | .25½ | @ | .28 |
| Double filling lb. | .28 | @ | .30 |
| **BURLAPS (Carload Lots)** | | | |
| 7½-ounce 40-inch | 5.40 | @ | 5.45 |
| 8 -ounce 40-inch | 5.50 | @ | 5.60 |
| 10 -ounce 40-inch | 7.65 | @ | 7.70 |
| 10½-ounce 40-inch | 7.75 | @ | 7.90 |
| **DRILLS** | | | |
| 37-inch 2.75-yard yd. | .16¾ | @ | .17 |
| 37-inch 3.00-yard yd. | .16 | @ | .16½ |
| 37-inch 3.25-yard yd. | .15 | @ | .15½ |
| 37-inch 3.50-yard yd. | .14¾ | @ | .15 |
| 37-inch 3.95-yard yd. | .12¾ | @ | .13 |
| **OSNABURGS** | | | |
| 30-inch 7-ounce | .17¼ | @ | .17¾ |
| 40-inch 7-ounce | .18 | @ | .18¼ |

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